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SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Vasu Jagannathan Examiner #: 6/18/02
Art Unit: 1714 Phone Number 306-2777 Serial Number: SAWS Case
Mail Box and Bldg/Room Location: CR-3, 4D01 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need:

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched.
Include the elected species or structures, keywords, synonyms, acronyms; and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc., if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Improvement in the Stabilization of Vinyl Halide Polymers

Inventors (please provide full names): 1) Jean-Yves CHENARD
2) Jean-Claude MENDELSON

Earliest Priority Filing Date: Varies with claims (see below)

For Sequence Searches Only Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

See Attachment

I will be out of the office
tomorrow (6/19) but I'll be in
Thurs if you have questions

K.F

STAFF USE ONLY		Type of Search	Vendors and cost where applicable
Searcher:	<u>R. Fuller</u>	NA Sequence (#)	STN
Searcher Phone #:		AA Sequence (#)	Dialog
Searcher Location:		Structure (#)	Questel/Orbit
Date Searcher Picked Up:		Bibliographic	Dr. Link
Date Completed:	<u>6/18/02</u>	Litigation	Lexis/Nexis
Searcher Prep & Review Time:	<u>30</u>	Fulltext	Sequence Systems
Clerical Prep Time:		Patent Family	WWW/Internet
Online Time:	<u>100</u>	Other	Other (specify)

07/870,759

CDB + NPL
Search
EIC

JAGANNATHAN

SAWS

Page 1

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DICTIONARY FILE UPDATES: 17 JUN 2002 HIGHEST RN 431874-59-8

TSCA INFORMATION NOW CURRENT THROUGH January 7, 2002

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Calculated physical property data is now available. See HELP PROPERTIES
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Registry File, for complete details:

<http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf>

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FILE COVERS 1907 - 18 Jun 2002 VOL 136 ISS 25
FILE LAST UPDATED: 17 Jun 2002 (20020617/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

CAS roles have been modified effective December 16, 2001. Please check your SDI profiles to see if they need to be revised. For information on CAS roles, enter HELP ROLES at an arrow prompt or use the CAS Roles thesaurus (/RL field) in this file.

=> d que

L1	18773 SEA FILE=REGISTRY ABB=ON	(SN(L)S(L)C(L)H)/ELS	<i>covers 247 i, the broadest + therefore 237a and 239 b</i>
L2	(353067)SEA FILE=REGISTRY ABB=ON	(S(L)C(L)H(L)O)/ELS(L)4/ELC.SUB	
L3	38364 SEA FILE=REGISTRY ABB=ON	L2 NOT 1-40/NR	
L4	16503 SEA FILE=REGISTRY ABB=ON	L3 AND ESTER	
L5	4006 SEA FILE=REGISTRY ABB=ON	L4 AND 2/O AND 1/S	<i>237 b</i>
L6	2424 SEA FILE=REGISTRY ABB=ON	L5 AND 1/NC	<i>239 b</i>
L8	492 SEA FILE=REGISTRY ABB=ON	L6 AND (MERCAPT? OR THIOL)	<i>247 ii</i>
L12	3157 SEA FILE=HCPLUS ABB=ON	L8	
L25	8476 SEA FILE=HCPLUS ABB=ON	L1	
L26	166 SEA FILE=HCPLUS ABB=ON	L12 AND L25	

L27 136 SEA FILE=HCAPLUS ABB=ON L26 AND P/DT
 L28 30 SEA FILE=HCAPLUS ABB=ON L26 NOT L27
 L29 3 SEA FILE=HCAPLUS ABB=ON L28 NOT (1980-2002) /PY
 L30 58 SEA FILE=HCAPLUS ABB=ON L27 AND US/PC
 L31 21 SEA FILE=HCAPLUS ABB=ON L30 NOT ((1980-2002)/AY OR (1980-2002)
 /PRY)
 L32 78 SEA FILE=HCAPLUS ABB=ON L27 NOT US/PC
 L33 22 SEA FILE=HCAPLUS ABB=ON L32 AND PD.B<19790828
 L34 46 SEA FILE=HCAPLUS ABB=ON L29 OR L31 OR L33
 L50 985 SEA FILE=REGISTRY ABB=ON L1 AND OCTYL
 L51 1255 SEA FILE=HCAPLUS ABB=ON L50
 L52 37 SEA FILE=HCAPLUS ABB=ON L34 AND L51
 L53 15 SEA FILE=HCAPLUS ABB=ON L52 AND (COMPOSITION? OR COMPNS)
 L54 37 SEA FILE=HCAPLUS ABB=ON L34 AND (PVC OR ?VINYL?)
 L55 38 SEA FILE=HCAPLUS ABB=ON L53 OR L54

=> d 155 all hitstr 1-38

L55 ANSWER 1 OF 38 HCAPLUS COPYRIGHT 2002 ACS
 AN 1980:427357 HCAPLUS
 DN 93:27357
 TI Thermoplastic vinyl chloride polymers containing monoalkyltin
 stabilizers
 IN Abeler, Gerd
 PA Ciba-Geigy Corp., USA
 SO U.S., 5 pp. Cont. of U.S. Ser. No. 806,428, abandoned.
 CODEN: USXXAM
 DT Patent
 LA English
 IC C08K005-58; C07F007-22
 NCL 260045750S
 CC 36-6 (Plastics Manufacture and Processing)
 FAN.CNT 3

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 4193913	A	19800318	US 1978-881445	19780227 <--
	CH 588980	A	19770630	CH 1974-620	19740117
	IT 1028414	A	19790130	IT 1975-19333	19750116
PRAI	CH 1974-620		19740117		
	US 1975-540924		19750114		
	US 1975-639146		19751209		
	US 1977-806428		19770616		
	CH 1974-14308		19741025		

Not review

AB Monoalkyltin compd. heat stabilizers for PVC [9002-86-2] are esp. useful in packaging materials for foodstuffs due to low toxicity. Thus, 12.0 g MeSnCl₃ was treated with 43.9 g myristylthioglycolate [57414-16-1] in the presence of 15 g NaHCO₃ to give methyltin tris(myristyl thioglycollate) (I) [57414-17-2]. PVC 100, montan wax 0.5, monoglycerol ester 1.0, and I 1.0 part were milled at 190.degree. and required 25 min to give a noticeable color change.

ST PVC alkyltin thioglycolate stabilizer; food packaging
 PVC alkyltin stabilizer

IT Packaging materials
 (for food, vinyl chloride copolymers as, monoalkyltin derivs.
 as heat stabilizers for)

IT Heat stabilizers
 (monoalkyltin compds., for vinyl chloride polymers for food
 packaging materials)

IT Toxicity

(of monoalkyltin compd. heat stabilizers, for vinyl chloride polymers for food packaging materials)

IT 818-08-6
RL: RCT (Reactant)
(esterification of, with butylstannoic acid)

IT 68-11-1, reactions
RL: RCT (Reactant)
(esterification of, with dodecanol)

IT 112-53-8
RL: RCT (Reactant)
(esterification of, with thioglycollic acid)

IT 9002-86-2 9003-22-9
RL: USES (Uses)
(heat stabilizers for, monoalkyltin compds. as, for food packaging materials)

IT 26292-98-8 57414-15-0 57414-17-2
57414-18-3 57414-19-4 57450-74-5
72259-65-5 74142-93-1 74162-83-7
RL: MOA (Modifier or additive use); USES (Uses)
(heat stabilizers, for PVC)

IT 57414-16-1
RL: RCT (Reactant)
(reaction of, with alkyltin chlorides)

IT 22811-02-5
RL: RCT (Reactant)
(reaction of, with butylstannoic acid)

IT 10220-46-9
RL: RCT (Reactant)
(reaction of, with monobutyltin oxide)

IT 27458-93-1
RL: RCT (Reactant)
(reaction of, with octadecanol)

IT 27458-92-0
RL: RCT (Reactant)
(reaction of, with thioglycollic acid)

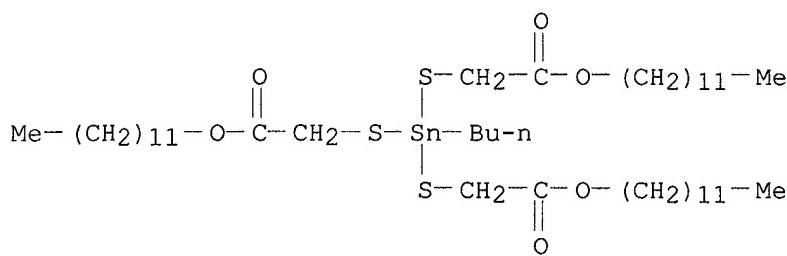
IT 993-16-8 2273-43-0
RL: RCT (Reactant)
(reaction of, with thioglycollic acid alkyl esters)

IT 26738-80-7
RL: RCT (Reactant)
(reaction of, with thioglycollic acid tetradecyl ester)

IT 26292-98-8 57414-15-0 57414-17-2
57414-18-3 57414-19-4 57450-74-5
72259-65-5 74142-93-1 74162-83-7
RL: MOA (Modifier or additive use); USES (Uses)
(heat stabilizers, for PVC)

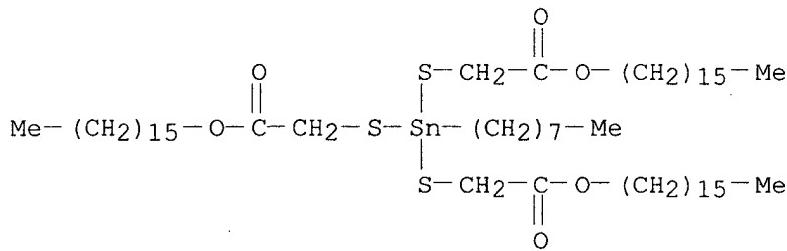
RN 26292-98-8 HCAPLUS

CN 8-Oxa-3,5-dithia-4-stannaecicosanoic acid, 4-butyl-4-[[2-(dodecyloxy)-2-oxoethyl]thio]-7-oxo-, dodecyl ester (9CI) (CA INDEX NAME)



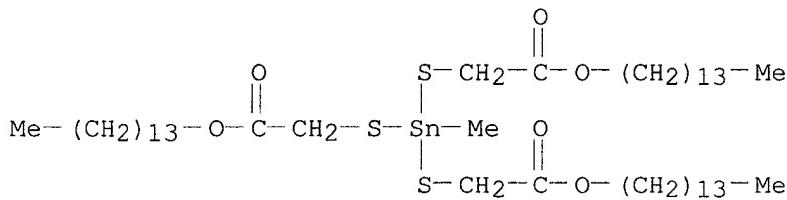
RN 57414-15-0 HCPLUS

CN 8-Oxa-3,5-dithia-4-stannatetracosanoic acid, 4-[[2-(hexadecyloxy)-2-oxoethyl]thio]-4-octyl-7-oxo-, hexadecyl ester (9CI) (CA INDEX NAME)



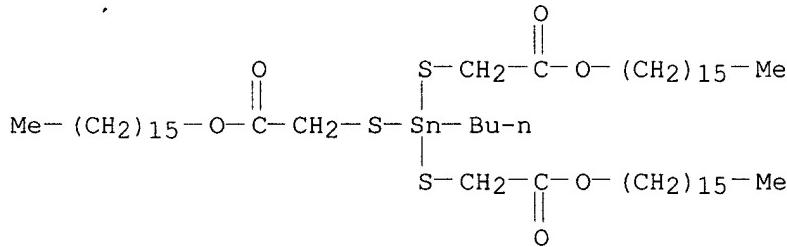
RN 57414-17-2 HCPLUS

CN 8-Oxa-3,5-dithia-4-stannadocosanoic acid, 4-methyl-7-oxo-4-[[2-oxo-2-(tetradecyloxy)ethyl]thio]-, tetradecyl ester (9CI) (CA INDEX NAME)



RN 57414-18-3 HCPLUS

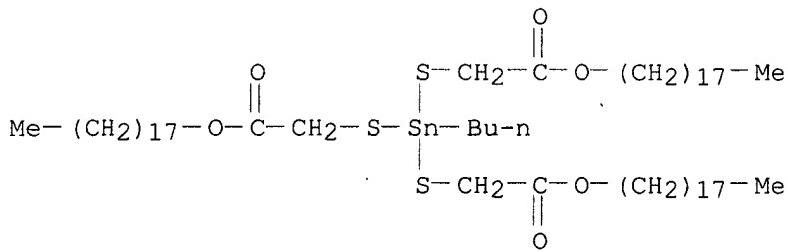
CN 8-Oxa-3,5-dithia-4-stannatetracosanoic acid, 4-butyl-4-[[2-(hexadecyloxy)-2-oxoethyl]thio]-7-oxo-, hexadecyl ester (9CI) (CA INDEX NAME)



RN 57414-19-4 HCPLUS

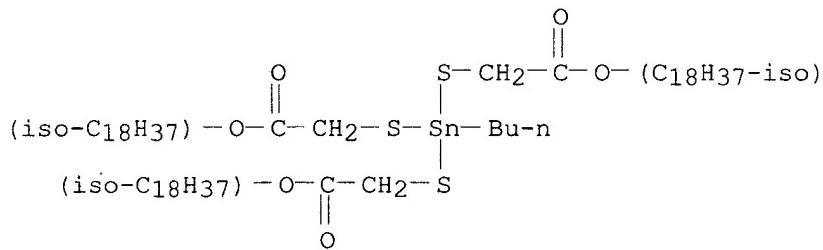
CN 8-Oxa-3,5-dithia-4-stannahexacosanoic acid, 4-butyl-4-[[2-(octadecyloxy)-2-

oxoethyl]thio]-7-oxo-, octadecyl ester (9CI) (CA INDEX NAME)



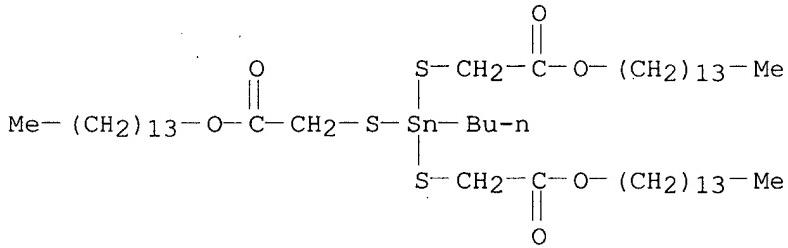
RN 57450-74-5 HCAPLUS

CN Acetic acid, 2,2'-[butyl[2-(isoctadecyloxy)-2-oxoethyl]thio]stannylenebis(thio)bis-, diisoctadecyl ester (9CI) (CA INDEX NAME)



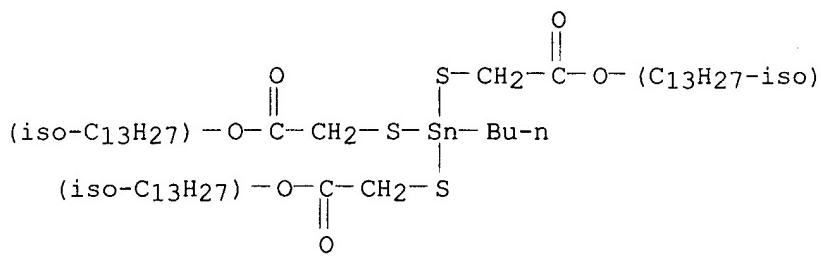
RN 72259-65-5 HCAPLUS

CN Acetic acid, 2,2',2'''-[(butylstannylidyne)tris(thio)]tris-, tritetradearyl ester (9CI) (CA INDEX NAME)



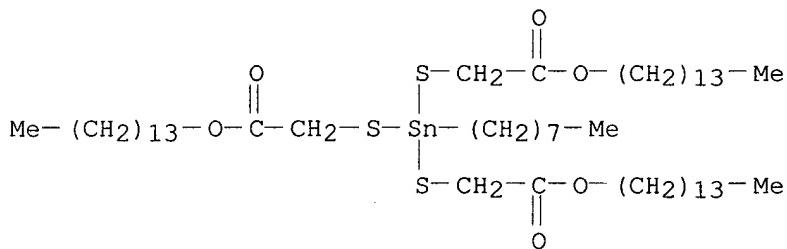
RN 74142-93-1 HCAPLUS

CN Acetic acid, 2,2',2'''-[(butylstannylidyne)tris(thio)]tris-, triisotridearyl ester (9CI) (CA INDEX NAME)



RN 74162-83-7 HCPLUS

CN 8-Oxa-3,5-dithia-4-stannadocosanoic acid, 4-octyl-7-oxo-4-[2-oxo-2-(tetradecyloxy)ethyl]thio]-, tetradecyl ester (9CI) (CA INDEX NAME)

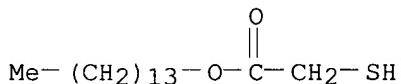


IT 57414-16-1

RL: RCT (Reactant)
(reaction of, with alkyltin chlorides)

RN 57414-16-1 HCPLUS

CN Acetic acid, mercapto-, tetradecyl ester (9CI) (CA INDEX NAME)

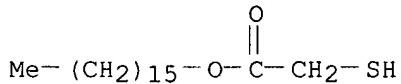


IT 22811-02-5

RL: RCT (Reactant)
(reaction of, with butylstannoic acid)

RN 22811-02-5 HCPLUS

CN Acetic acid, mercapto-, hexadecyl ester (8CI, 9CI) (CA INDEX NAME)

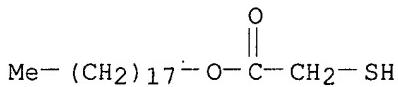


IT 10220-46-9

RL: RCT (Reactant)
(reaction of, with monobutyltin oxide)

RN 10220-46-9 HCPLUS

CN Acetic acid, mercapto-, octadecyl ester (7CI, 8CI, 9CI) (CA INDEX NAME)



L55 ANSWER 2 OF 38 HCAPLUS COPYRIGHT 2002 ACS

AN 1980:7402 HCAPLUS

DN 92:7402

TI Heat stabilizers for chlorine-containing resins

IN Hirayama, Yukio; Kizaki, Yoshio; Kiryu, Mitsuaki

PA Sankyo Organic Chemicals Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 9 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC C08L027-06; C08K005-59

CC 36-6 (Plastics Manufacture and Processing)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 54066954	A2	19790529	JP 1977-133630	19771109
AB	R4Sn (R = alkyl, Ph) were treated with SbR13 (R1 = Cl, Br, I), SnR24 (R2 = halogen), and then mercapto compds. in the presence of a base to give products useful as heat stabilizers for PVC [9002-86-2] and its blends with ABS [9003-56-9]. For example, Bu4Sn [1461-25-2] was treated with SbCl3 at 40.degree. for 30 min, SnCl4 at 130.degree. for 1 h, and then HSCH2CO2C8H17-iso [25103-09-7] in the presence of Et3N in benzene for 30 min to give a 38.7:33.0:28.3 mixt. (I) of BuSn(SCH2CO2C8H17-iso)3 (II) [25852-70-4], Bu2Sn(SCH2CO2C8H17-iso)2(III), and Bu2Sn(SCH2CO2C8H17-iso)2 [71599-34-3]. A PVC specimen contg. 2 phr I had better heat resistance (discoloration in 185.degree. air oven) than that contg. 2 phr II alone or 2 phr 1:1 II-III mixt.				<i>Not relevant</i>
ST	tin mercaptide heat stabilizer PVC; antimony mercaptide heat stabilizer PVC; thermal discoloration prevention PVC				
IT	Heat stabilizers (organotin mercaptide-organoantimony mercaptide mixts., for PVC)				
IT	Discoloration prevention (thermal, of PVC, with organotin and organoantimony mercaptides)				
IT	9003-56-9 RL: USES (Uses) (PVC blends, heat stabilizers for, organotin mercaptide-organoantimony mercaptide mixts. as)				
IT	9002-86-2 RL: USES (Uses) (heat stabilizers for, organotin mercaptide-organoantimony mercaptide mixts. as)				
IT	25168-24-5P 25852-70-4P 71599-34-3P RL: PREP (Preparation) (manuf. of, as a heat stabilizer for PVC)				
IT	3026-81-1P 32251-22-2P 53202-61-2P 61241-05-2P 70729-71-4P 71596-45-7P 71596-46-8P 71596-47-9P 71596-48-0P 71596-49-1P 71596-50-4P 71596-51-5P RL: PREP (Preparation) (manuf. of, as heat stabilizer for PVC)				

IT 22205-30-7P 26401-86-5P 26401-97-8P
 53050-37-6P 59157-52-7P 59185-95-4P
 71596-55-9P 71596-56-0P 71599-35-4P
 RL: PREP (Preparation)
 (manuf. of, as heat stabilizers for PVC)

IT 683-18-1P 1118-46-3P 5613-73-0P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
 (prepn. and reaction of, with mercaptide compds.)

IT 3091-25-6P 3542-36-7P 71596-54-8P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
 (prepn. and reaction of, with mercapto compds.)

IT 1461-22-9P 2587-76-0P 5613-73-0P 71596-53-7P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
 (prepn. and reaction of, with tin tetrachloride)

IT 1461-25-2 3590-84-9
 RL: RCT (Reactant)
 (reaction of, with antimony trichloride)

IT 60-24-2 1322-36-7 16849-98-2 25103-09-7 50448-95-8
 71596-52-6
 RL: RCT (Reactant)
 (reaction of, with organotin and organoantimony chloride)

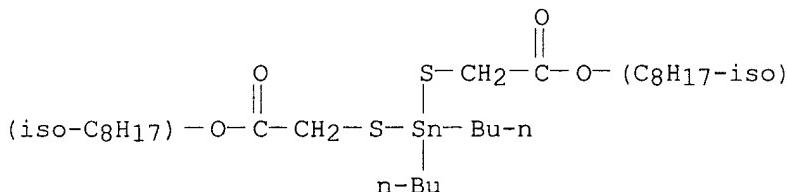
IT 7646-78-8, reactions 25103-09-7
 RL: RCT (Reactant)
 (reaction of, with organotin and organoantimony chlorides)

IT 10025-91-9
 RL: RCT (Reactant)
 (reaction of, with organotin compds.)

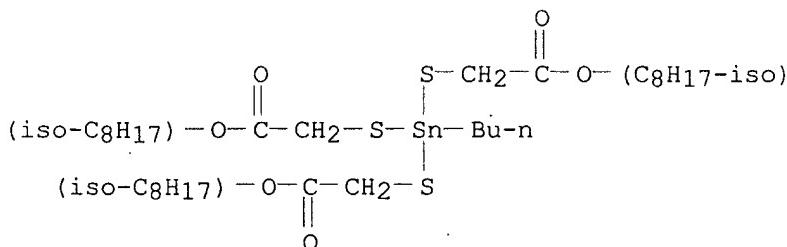
IT 25168-24-5P 25852-70-4P
 RL: PREP (Preparation)
 (manuf. of, as a heat stabilizer for PVC)

RN 25168-24-5 HCPLUS

CN Acetic acid, 2,2'-(dibutylstannylene)bis(thio)]bis-, diisooctyl ester
 (9CI) (CA INDEX NAME)



RN 25852-70-4 HCPLUS
 CN Acetic acid, 2,2',2'''-(butylstannylidyne)tris(thio)]tris-, triisooctyl
 ester (9CI) (CA INDEX NAME)

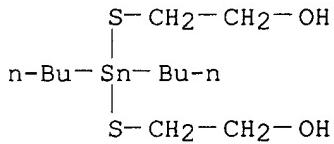


IT 3026-81-1P 32251-22-2P 53202-61-2P
 61241-05-2P 70729-71-4P 71596-46-8P
 71596-47-9P 71596-49-1P

RL: PREP (Preparation)
 (manuf. of, as heat stabilizer for PVC)

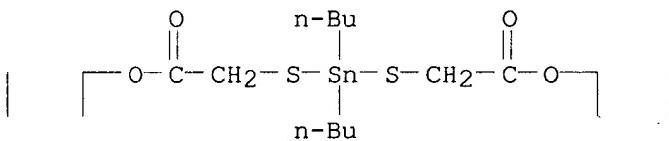
RN 3026-81-1 HCAPLUS

CN Ethanol, 2,2'-(dibutylstannylene)bis(thio)bis- (9CI) (CA INDEX NAME)



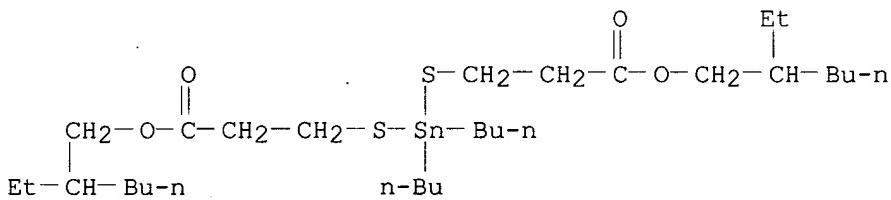
RN 32251-22-2 HCAPLUS

CN Acetic acid, 2,2'-(dibutylstannylene)bis(thio)bis-, dicyclohexyl ester
 (9CI) (CA INDEX NAME)



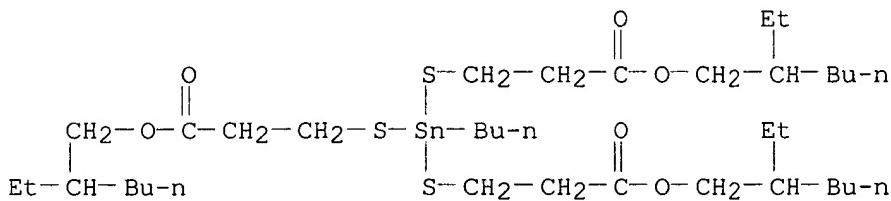
RN 53202-61-2 HCAPLUS

CN 10-Oxa-4,6-dithia-5-stannahexadecanoic acid, 5,5-dibutyl-12-ethyl-9-oxo-,
 2-ethylhexyl ester (9CI) (CA INDEX NAME)



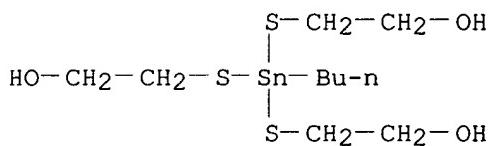
RN 61241-05-2 HCAPLUS

CN 10-Oxa-4,6-dithia-5-stannahexadecanoic acid, 5-butyl-12-ethyl-5-[3-[(2-ethylhexyl)oxy]-3-oxopropyl]thio]-9-oxo-, 2-ethylhexyl ester (9CI) (CA INDEX NAME)



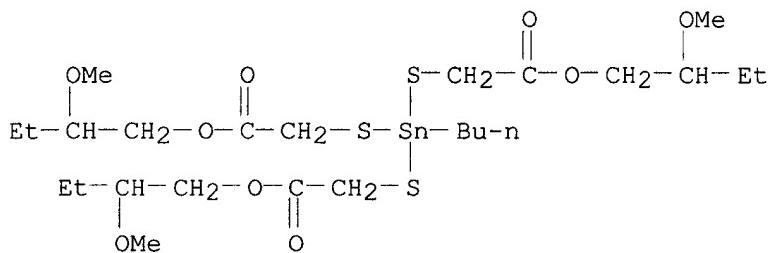
RN 70729-71-4 HCAPLUS

CN Ethanol, 2,2',2''-(butylstannylene)tris(thio)tris- (9CI) (CA INDEX NAME)



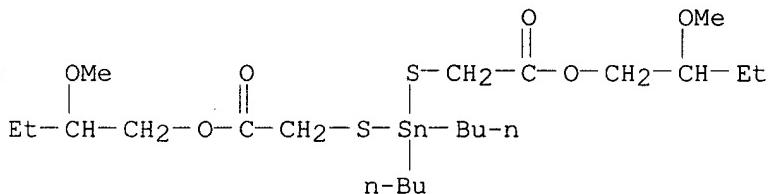
RN 71596-46-8 HCAPLUS

CN 8,11-Dioxa-3,5-dithia-4-stannadodecanoic acid, 4-butyl-10-ethyl-4-[[2-(2-methoxybutoxy)-2-oxoethyl]thio]-7-oxo-, 2-methoxybutyl ester (9CI) (CA INDEX NAME)



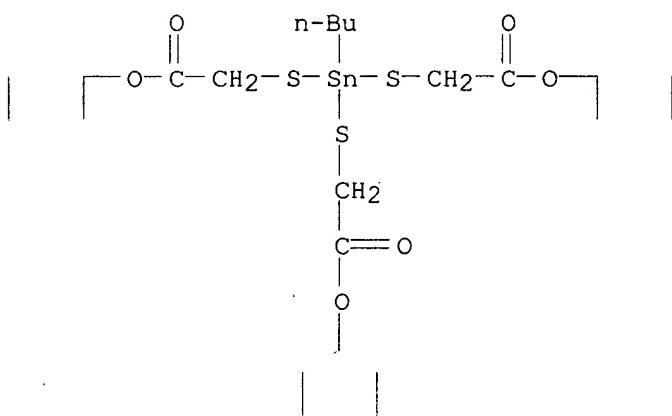
RN 71596-47-9 HCAPLUS

CN 8,11-Dioxa-3,5-dithia-4-stannadodecanoic acid, 4,4-dibutyl-10-ethyl-7-oxo-, 2-methoxybutyl ester (9CI) (CA INDEX NAME)



RN 71596-49-1 HCAPLUS

CN Acetic acid, 2,2',2'''-[(butylstannylidyne)tris(thio)]tris-, tricyclohexyl ester (9CI) (CA INDEX NAME)



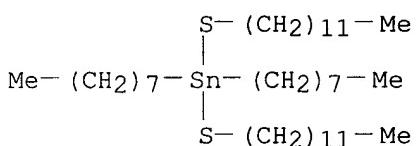
IT 22205-30-7P 26401-86-5P 26401-97-8P
53050-37-6P 59157-52-7P 59185-95-4P

RL: PREP (Preparation)

(manuf. of, as heat stabilizers for PVC)

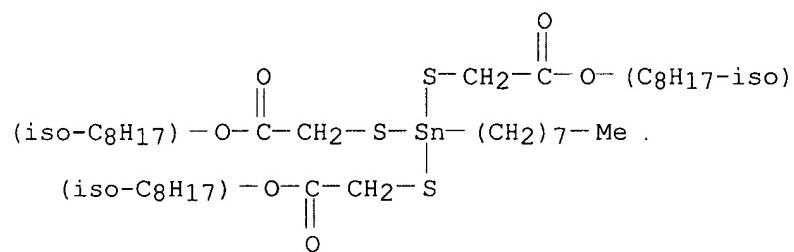
BN 22205-30-7 HCAPLUS

RN 22203-30-7, NEAT ESS
CN Stannane, bis(dodecylthio)dioctyl- (8CI, 9CI) (CA INDEX NAME)



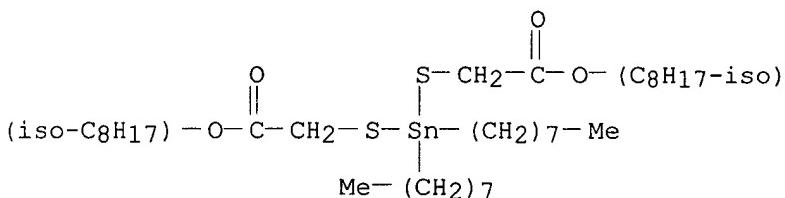
RN 26401-86-5 HCAPLUS

CN Acetic acid, 2,2',2''-[(octylstannylidyne)tris(thio)]tris-, triisooctyl ester (9CI) (CA INDEX NAME)

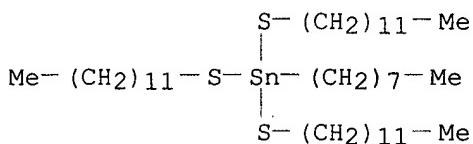


RN 26401-97-8 HCAPLUS

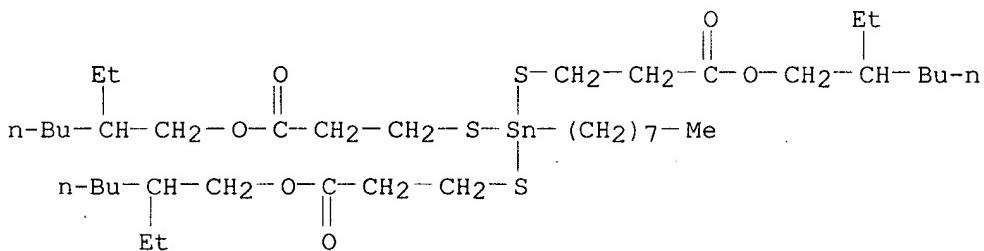
CN Acetic acid, 2,2'-[(dioctylstannylene)bis(thio)]bis-, diisoctyl ester
(9CI) (CA INDEX NAME)



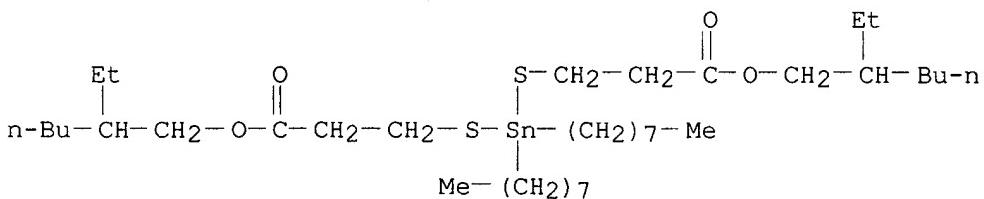
RN 53050-37-6 HCPLUS
CN Stannane, tris(dodecylthio)octyl- (9CI) (CA INDEX NAME)



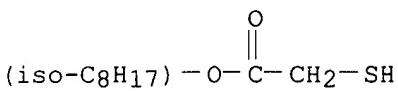
RN 59157-52-7 HCPLUS
CN 10-Oxa-4,6-dithia-5-stannahexadecanoic acid, 12-ethyl-5-[3-[(2-ethylhexyl)oxy]-3-oxopropyl]thio]-5-octyl-9-oxo-, 2-ethylhexyl ester (9CI)
(CA INDEX NAME)



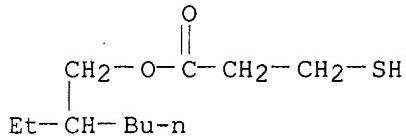
RN 59185-95-4 HCPLUS
CN 10-Oxa-4,6-dithia-5-stannahexadecanoic acid, 12-ethyl-5,5-dioctyl-9-oxo-, 2-ethylhexyl ester (9CI) (CA INDEX NAME)



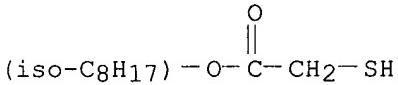
IT 25103-09-7 50448-95-8
RL: RCT (Reactant)
(reaction of, with organotin and organoantimony chloride)
RN 25103-09-7 HCPLUS
CN Acetic acid, mercapto-, isoctyl ester (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



RN 50448-95-8 HCAPLUS
 CN Propanoic acid, 3-mercaptop-, 2-ethylhexyl ester (9CI) (CA INDEX NAME)



IT 25103-09-7
 RL: RCT (Reactant)
 (reaction of, with organotin and organoantimony chlorides)
 RN 25103-09-7 HCAPLUS
 CN Acetic acid, mercapto-, isoocetyl ester (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



L55 ANSWER 3 OF 38 HCAPLUS COPYRIGHT 2002 ACS
 AN 1979:421784 HCAPLUS

DN 91:21784

TI Heat-resistant PVC compositions

IN Kitano, Yoshikazu

PA Nitto Kasei Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 5 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC C08L027-02; C08K005-57

CC 36-6 (Plastics Manufacture and Processing)

Section cross-reference(s): 29

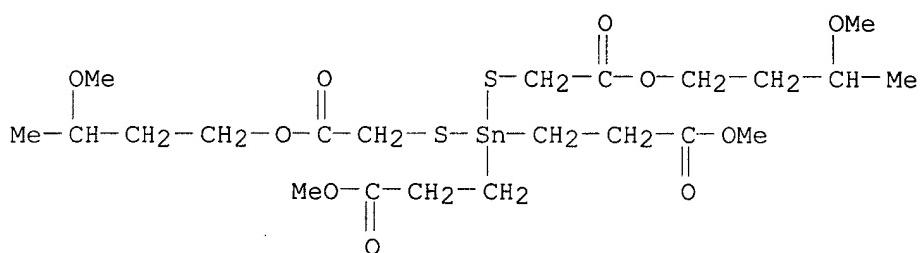
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 53034846	A2	19780331	JP 1976-110629	19760913
	JP 54037975	B4	19791117		

AB Heat-resistant PVC [9002-86-2] compns. contain
 organotin compds. $(R_02CCH_2CH_2)_2SnR_1R_2$, $(R_02CCH_2CH_2)_2SnY$, and (or)
 $(R_02CCH_2CH_2)_2SnR_1ZSnR_2(CH_2CH_2CO_2R)_2$ [R = C1-18 alkyl; R1 = S(CH₂)_nCO₂R₃,
 SR₃, O₂CR₃, O₂CCH:CHCO₂R₃, OR₃; R₂ = R₁, C₁; R₃ = C1-18 alkyl, alkenyl,
 cycloalkyl, benzyl, alkoxyalkyl; Y = Sm, S(CH₂)_nCO₂, O₂CCH:CHCO₂,
 S(CH₂)_nCO₂(CH₂)_pO₂C(CH₂)_nS; Z = Sm, O; m = 1-3; n = 1-4; p = 2-12]. Thus,
 a mixt. of 59.4 g Sn foil, 86.1 g Me acrylate [96-33-3], and 200 mL C₆H₆
 was heated to 60-70. degree. to give 154.6 g bis(carbomethoxyethyl)tin
 dichloride [10175-01-6], which (36.4 g) was mixed with 40.8 g isoocetyl
 thioglycolate [25103-09-7], 100 mL C₆H₆, 12.2 g NH₄OH, and 50
 mL H₂O, and dispersed. The org. layer was washed with H₂O and concd. to
 give 65.5 g bis(carbomethoxyethyl)tin bis(isoocetyl mercaptoacetate) (I) [

Not reverse

- 61460-21-7]. A mixt. of 100 parts PVC and 2 parts I was kneaded 3 min at 170.degree. to give a 0.5-mm sheet with better heat resistance at 190.degree. than a control contg. dioctyltin bis(isooctyl mercaptoacetate) instead of I.
- ST heat resistant PVC compn; tin deriv heat stabilizer; carboxyethyltin deriv heat stabilizer
- IT Heat stabilizers
(bis(carbalkoxyethyl)tin compds., for PVC)
- IT 9002-86-2
RL: USES (Uses)
(heat stabilizers for, bis(carbalkoxyethyl)tin compds. as)
- IT 67651-32-5
RL: MOA (Modifier or additive use); USES (Uses)
(heat stabilizers, for PVC)
- IT 67649-64-3
RL: MOA (Modifier or additive use); USES (Uses)
(heat stabilizers, for PVC, prepn. and reactions of)
- IT 61460-21-7 61470-35-7 61470-36-8 61470-37-9
67649-62-1 67649-63-2 67651-30-3
67651-31-4
RL: MOA (Modifier or additive use); USES (Uses)
(heat stabilizers, for PVC, prepn. of)
- IT 10175-02-7P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and reaction with isooctyl mercaptopropionate)
- IT 10175-01-6P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and reactions of)
- IT 10175-03-8P 67651-33-6P
RL: PREP (Preparation)
(prepn. of)
- IT 7440-31-5, reactions
RL: RCT (Reactant)
(reaction of, with Me acrylate)
- IT 30374-01-7
RL: RCT (Reactant)
(reaction of, with bis(carbethoxyethyl)tin dichloride)
- IT 112-55-0 143-07-7, reactions 13040-20-5 22504-50-3
25103-09-7 27431-40-9
RL: RCT (Reactant)
(reaction of, with bis(carbomethoxyethyl)tin dichloride)
- IT 96-33-3
RL: RCT (Reactant)
(reaction of, with tin)
- IT 67651-32-5
RL: MOA (Modifier or additive use); USES (Uses)
(heat stabilizers, for PVC)
- RN 67651-32-5 HCPLUS
- CN 2,6-Dioxa-9,11-dithia-10-stannatridecan-13-oic acid, 10,10-bis(3-methoxy-3-oxopropyl)-3-methyl-7-oxo-, 3-methoxybutyl ester (9CI) (CA INDEX NAME)

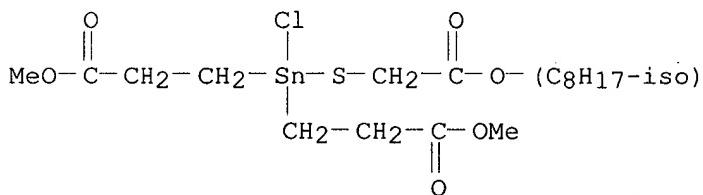


IT 67649-64-3

RL: MOA (Modifier or additive use); USES (Uses)
 (heat stabilizers, for PVC, prepn. and reactions of)

RN 67649-64-3 HCPLUS

CN Propanoic acid, 3,3'-(chloro[[2-(isoctyloxy)-2-oxoethyl]thio]stannylene)bis-, dimethyl ester (9CI) (CA INDEX NAME)



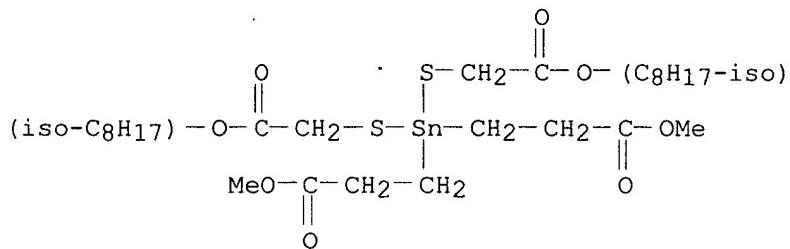
IT 61460-21-7 61470-36-8 67649-62-1

67649-63-2 67651-30-3 67651-31-4

RL: MOA (Modifier or additive use); USES (Uses)
 (heat stabilizers, for PVC, prepn. of)

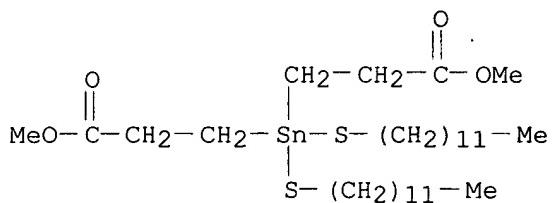
RN 61460-21-7 HCPLUS

CN Propanoic acid, 3,3'-(bis[[2-(isoctyloxy)-2-oxoethyl]thio]stannylene)bis-, dimethyl ester (9CI) (CA INDEX NAME)



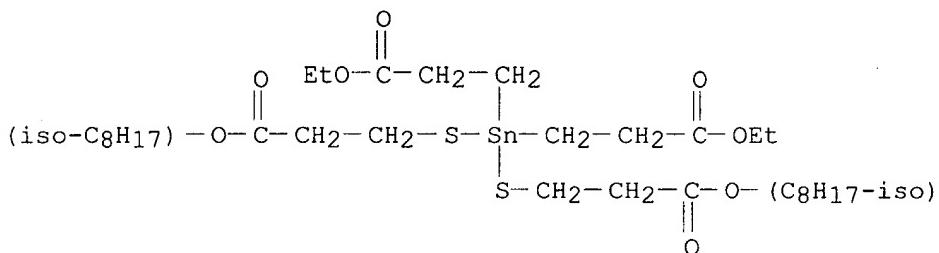
RN 61470-36-8 HCPLUS

CN Propanoic acid, 3,3'-(bis(dodecylthio)stannylene)bis-, dimethyl ester (9CI) (CA INDEX NAME)



RN 67649-62-1 HCPLUS

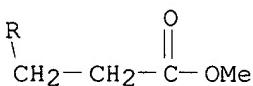
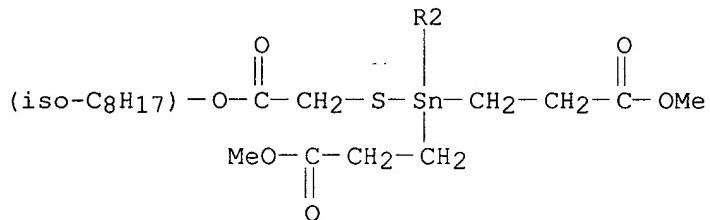
CN Propanoic acid, 3,3'-[[bis(3-ethoxy-3-oxopropyl)stannylene]bis(thio)]bis-, diisooctyl ester (9CI) (CA INDEX NAME)



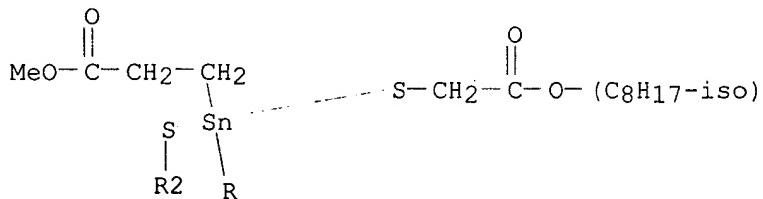
RN 67649-63-2 HCPLUS

CN Propanoic acid, 3,3',3'',3'''-[1,3-bis[[2-(isooctyloxy)-2-oxoethyl]thio]-1,3-distannathianediylidene]tetrakis-, tetramethyl ester (9CI) (CA INDEX NAME)

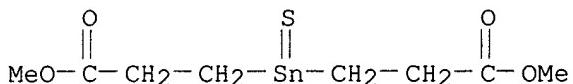
PAGE 1-A



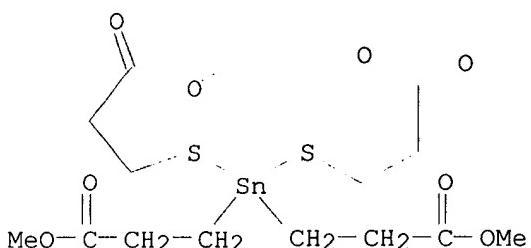
PAGE 2-A



RN 67651-30-3 HCAPLUS
CN Propanoic acid, 3,3'-(thioxostannylene)bis-, dimethyl ester (9CI) (CA INDEX NAME)

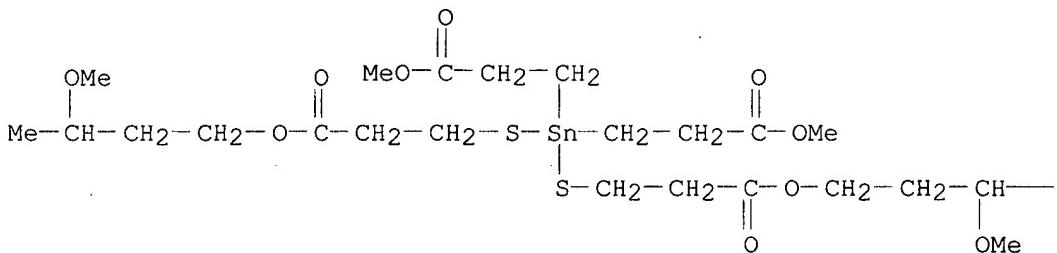


RN 67651-31-4 HCPLUS
CN 1,4-Dioxa-8,10-dithia-9-stannacyclotridecane-9,9-dipropanoic acid,
5,13-dioxo-, dimethyl ester (9CI) (CA INDEX NAME)



IT 67651-33-6P
 RL: PREP (Preparation)
 (prepn. of)
 RN 67651-33-6 HCAPLUS
 CN 2,6-Dioxa-10,12-dithia
 11,11-bis(3-methoxy-3-
 (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B

— Me

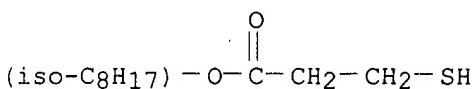
IT 30374-01-7

RL: RCT (Reactant)

(reaction of, with bis(carbethoxyethyl)tin dichloride)

RN 30374-01-7 HCAPLUS

CN Propanoic acid, 3-mercaptop-, isoctyl ester (9CI) (CA INDEX NAME)



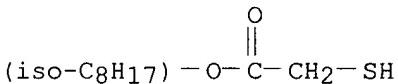
IT 25103-09-7

RL: RCT (Reactant)

(reaction of, with bis(carbomethoxyethyl)tin dichloride)

RN 25103-09-7 HCAPLUS

CN Acetic acid, mercapto-, isoctyl ester (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



L55 ANSWER 4 OF 38 HCAPLUS COPYRIGHT 2002 ACS

AN 1979:420721 HCAPLUS

DN 91:20721

TI Organotin compounds

IN Korbanka, Helmut; Scheidl, Franz

PA Hoechst A.-G., Fed. Rep. Ger.

SO Ger. Offen., 20 pp.

CODEN: GWXXBX

DT Patent

LA German

IC C07F007-22; C08K005-57; C08L027-00; C08L023-28

CC 29-8 (Organometallic and Organometalloidal Compounds)

Section cross-reference(s): 35

FAN.CNT 1

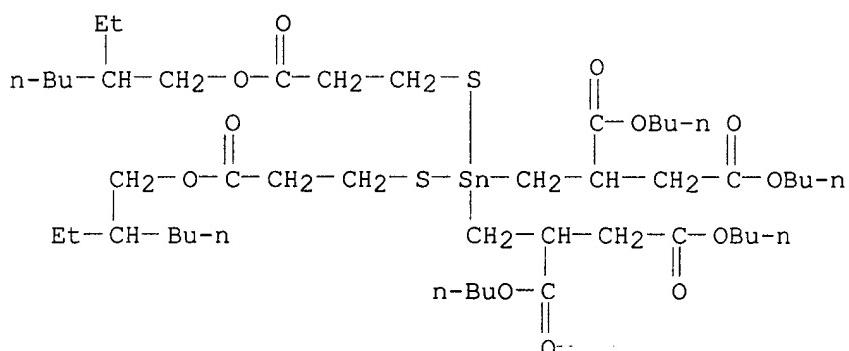
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 2735810	A1	19790215	DE 1977-2735810	19770809
	DE 2735810	B2	19810129		
	EP 746	A1	19790221	EP 1978-100532	19780728
	EP 746	B1	19810128		
	R: BE, CH, DE, FR, GB, NL				
	JP 54030119	A2	19790306	JP 1978-95878	19780808
	US 4237043	A	19801202	US 1978-931897	19780808 <--
	CA 1116625	A1	19820119	CA 1978-308882	19780808

PRAI DE 1977-2735810 19770809

AB Approx. 20 title compds. [R₁COCHR₂CR₃R₄]₂SnR₅2 (I) and R₁COCHR₂CR₃R₄SnR₅3 (II, R₁ = OH, amino, alkoxy, acryloxy; R₂-R₄ = H, C₁-30 alkyl, (CH₂nCOR₁, n = 1-15; R₅ = S(CH₂)_mCO₂R₆, SR₆, O₂CR₆, O₂CCH:CHCO₂R₆, R₆ = alkyl, m = 1,2] were prep'd. by reaction of I or II (R₅ = halide) with R₅H. Thus, 0.2 mol 2-ethylhexyl thioglycolate, 0.2 equiv. Cl, a mixt. of 59% [MeO₂CCH₂CH(CO₂Me)CH₂]₂SnCl₁₂ and 41% MeO₂CCH₂CH(CO₂Me)CH₂SnCl₁₃, and 0.2 mol Et₃N gave 69.5 g [MeO₂CCH₂CH(CO₂Me)CH₂]₂Sn[SCH₂CO₂CH₂CHEt(CH₂)₃Me]₂ and MeO₂CCH₂CH(CO₂Me)CH₂Sn[SCH₂CO₂CH₂CHEt(CH₂)₃Me]₃. I and II were useful

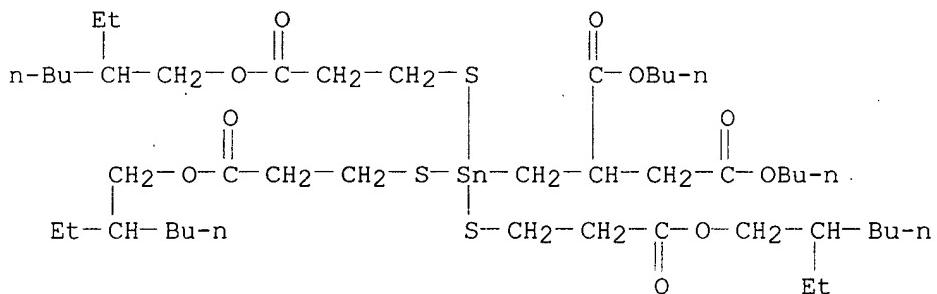
Not reviewed

as stabilizers for polymers, e.g., poly(vinyl chloride).
ST **polyvinyl** chloride stabilizer organotin compd; polymer
stabilizer organotin compd; chlorostannane mercaptan reaction; carboxylic
acid chlorostannane reaction; stannane alkylthio carboxylalkyl; tin
thioether; carboxylate stannyly
IT Polymers, uses and miscellaneous
RL: USES (Uses)
(stabilizers for, tin compds. as)
IT 70166-00-6P 70166-01-7P 70166-02-8P
70166-03-9P 70166-04-0P 70166-05-1P 70166-06-2P
70166-07-3P 70166-08-4P 70166-09-5P 70166-10-8P
70166-11-9P 70166-12-0P 70166-13-1P
70181-40-7P 70181-41-8P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. and stabilizing ability of, poly(vinyl chloride))
IT 70165-90-1P 70165-91-2P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of)
IT 112-55-0 143-07-7, reactions 925-21-3 50448-95-8
RL: RCT (Reactant)
(reaction of, with chlorostannane)
IT **7659-86-1**
RL: RCT (Reactant)
(reaction of, with chlorostannanes)
IT 70165-76-3 70165-77-4 70165-78-5 70165-79-6 70165-80-9
70165-81-0 70165-85-4 70165-86-5.. 70165-87-6 70165-88-7
70165-92-3 70165-93-4 70165-94-5 70165-95-6 70165-96-7
70165-97-8 70165-98-9 70165-99-0
RL: RCT (Reactant)
(reaction of, with organotins and with carboxylic acids)
IT 9002-86-2
RL: PROC (Process)
(stabilization of, with tin compds.)
IT 77-58-7 1185-81-5 10584-98-2 15546-16-4
RL: RCT (Reactant)
(stabilizing activity of, for poly(vinyl chloride))
IT 70166-00-6P 70166-01-7P 70166-02-8P
70166-03-9P 70166-04-0P 70166-10-8P
70166-11-9P 70166-12-0P 70166-13-1P
70181-41-8P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. and stabilizing ability of, poly(vinyl chloride))
RN 70166-00-6 HCPLUS
CN Butanedioic acid, 2,2'-(bis[[3-[(2-ethylhexyl)oxy]-3-
oxopropyl]thio]stannylene]bis(methylene)]bis-, tetrabutyl ester (9CI) (CA
INDEX NAME)



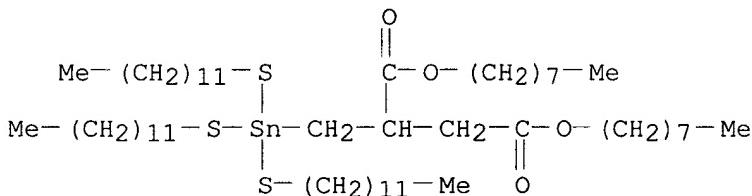
RN 70166-01-7 HCPLUS

CN Butanedioic acid, [[tris[[3-[(2-ethylhexyl)oxy]-3-oxopropyl]thio]stannylymethyl], dibutyl ester (9CI) (CA INDEX NAME)



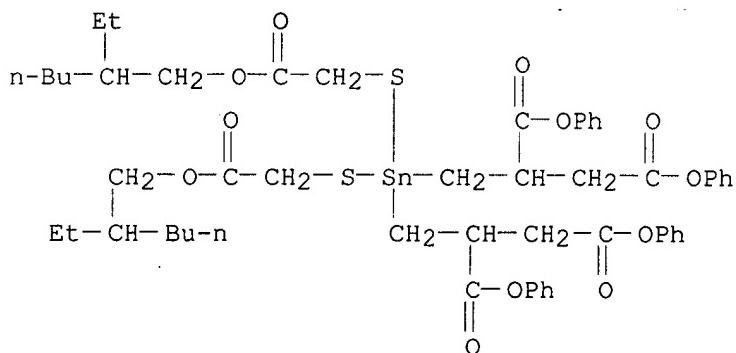
RN 70166-02-8 HCPLUS

CN Butanedioic acid, [[tris(dodecylthio)stannylymethyl], dioctyl ester (9CI) (CA INDEX NAME)



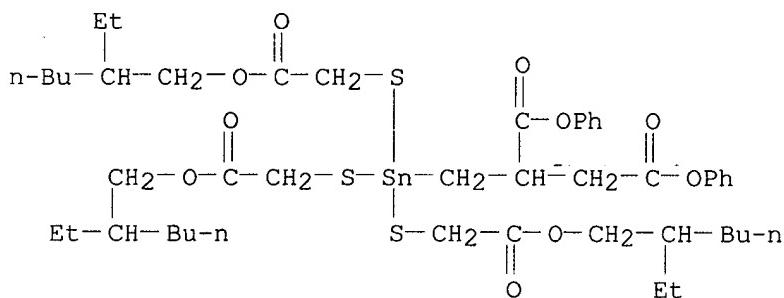
RN 70166-03-9 HCPLUS

CN Butanedioic acid, 2,2'-[[bis[[2-[(2-ethylhexyl)oxy]-2-oxoethyl]thio]stannylene]bis(methylene)]bis-, tetraphenyl ester (9CI) (CA INDEX NAME)



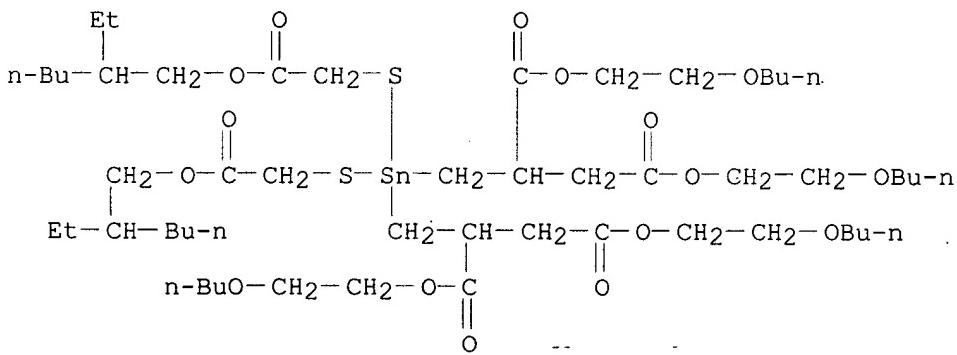
RN 70166-04-0 HCAPLUS

CN Butanedioic acid, [[tris[[2-[(2-ethylhexyl)oxy]-2-oxoethyl]thio]stannylmethyl]-, diphenyl ester (9CI) (CA INDEX NAME)



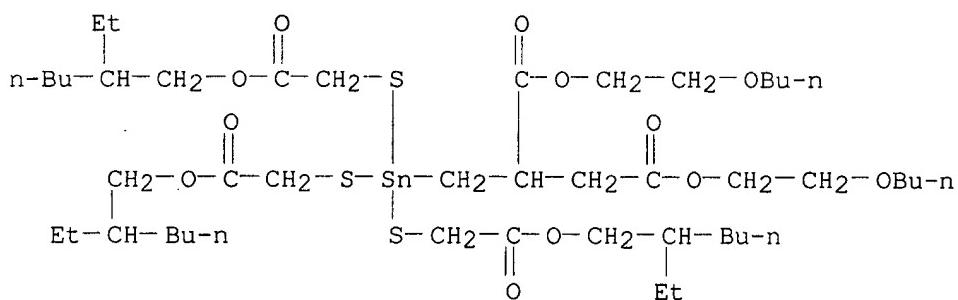
RN 70166-10-8 HCAPLUS

CN Butanedicic acid, 2,2'-[{bis[[2-[(2-ethylhexyl)oxy]-2-oxoethyl]thio]stannylene]bis(methylene)]bis-, tetrakis(2-butoxyethyl)ester (9CI) (CA INDEX NAME)



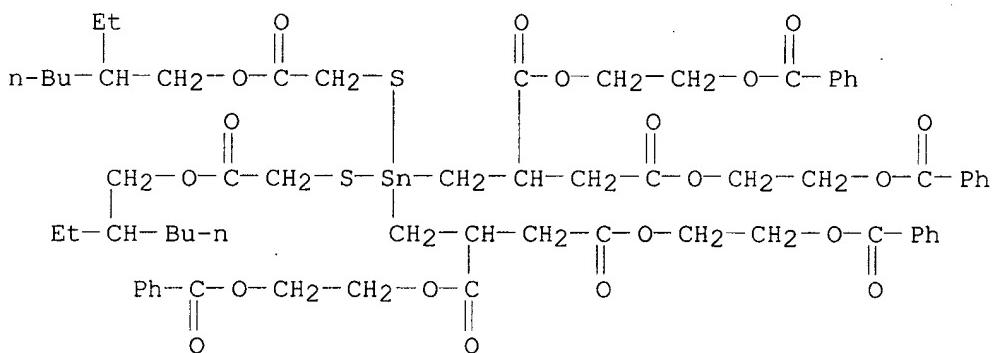
RN 70166-11-9 HCAPLUS

CN Butanedioic acid, [[tris[[2-[(2-ethylhexyl)oxy]-2-oxoethyl]thio]stannylmethyl], bis(2-butoxyethyl) ester (9CI) (CA INDEX NAME)



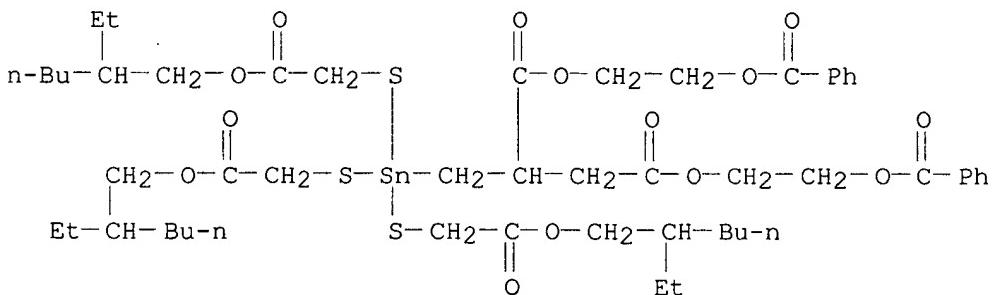
RN 70166-12-0 HCPLUS

CN Butanedioic acid, 2,2'-[bis[[2-[(2-ethylhexyl)oxy]-2-oxoethyl]thio]stannylene]bis(methylene)bis-, tetrakis[2-(benzoyloxy)ethyl] ester (9CI) (CA INDEX NAME)



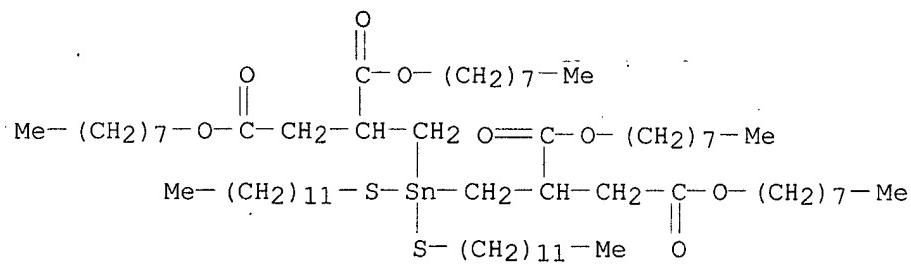
RN 70166-13-1 HCPLUS

CN Butanedioic acid, [[tris[[2-[(2-ethylhexyl)oxy]-2-oxoethyl]thio]stannyl]methyl]-, bis[2-(benzoyloxy)ethyl] ester (9CI) (CA INDEX NAME)



RN 70181-41-8 HCPLUS

CN Butanedioic acid, 2,2'-[bis(dodecylthio)stannylene]bis(methylene)bis-, tetraoctyl ester (9CI) (CA INDEX NAME)

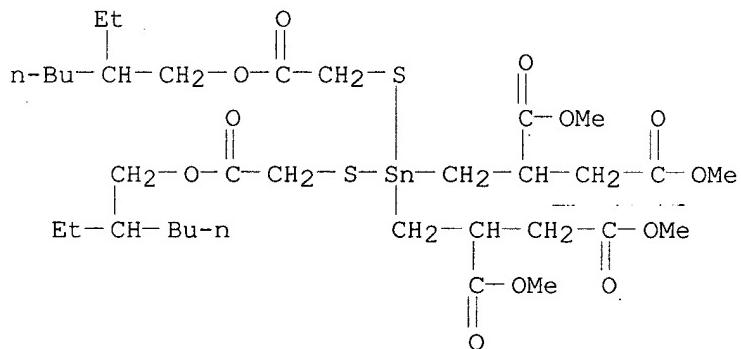


IT 70165-90-1P 70165-91-2P

RL: SPN (Synthetic preparation); PREP (Preparation)
(prep. of)

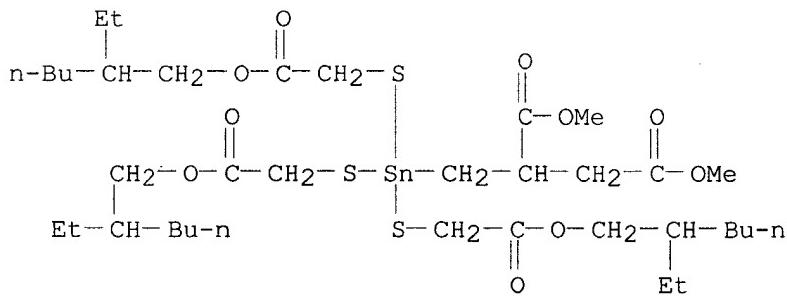
RN 70165-90-1 HCPLUS

CN Butanedioic acid, 2,2'-(bis[[2-[(2-ethylhexyl)oxy]-2-oxoethyl]thio]stannylene)bis(methylene)bis-, tetramethyl ester (9CI) (CA INDEX NAME)



RN 70165-91-2 HCPLUS

CN Butanedioic acid, [[tris[[2-[(2-ethylhexyl)oxy]-2-oxoethyl]thio]stannyl]methyl]-, dimethyl ester (9CI) (CA INDEX NAME)

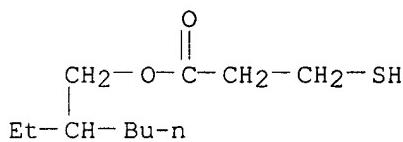


IT 50448-95-8

RL: RCT (Reactant)
(reaction of, with chlorostannane)

RN 50448-95-8 HCPLUS

CN Propanoic acid, 3-mercaptop-, 2-ethylhexyl ester (9CI) (CA INDEX NAME)



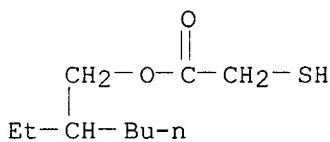
IT 7659-86-1

RL: RCT (Reactant)

(reaction of, with chlorostannanes)

RN 7659-86-1 HCPLUS

CN Acetic acid, mercapto-, 2-ethylhexyl ester (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



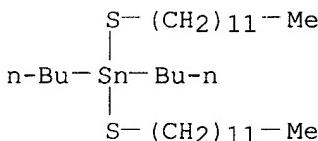
IT 1185-81-5 10584-98-2

RL: RCT (Reactant)

(stabilizing activity of, for poly(vinyl chloride))

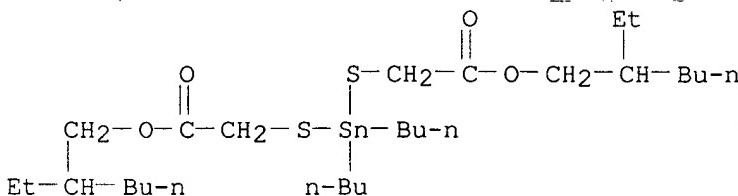
RN 1185-81-5 HCPLUS

CN Stannane, dibutylbis(dodecylthio)- (8CI, 9CI) (CA INDEX NAME)



RN 10584-98-2 HCPLUS

CN 8-Oxa-3,5-dithia-4-stannatetradecanoic acid, 4,4-dibutyl-10-ethyl-7-oxo-, 2-ethylhexyl ester (9CI) (CA INDEX NAME)



L55 ANSWER 5 OF 38 HCPLUS COPYRIGHT 2002 ACS

AN 1979:204258 HCPLUS

DN 90:204258

TI Phosphorus-containing organotin halides

IN Scheidl, Franz

PA Hoechst A.-G., Ger.

SO Ger. Offen., 18 pp.

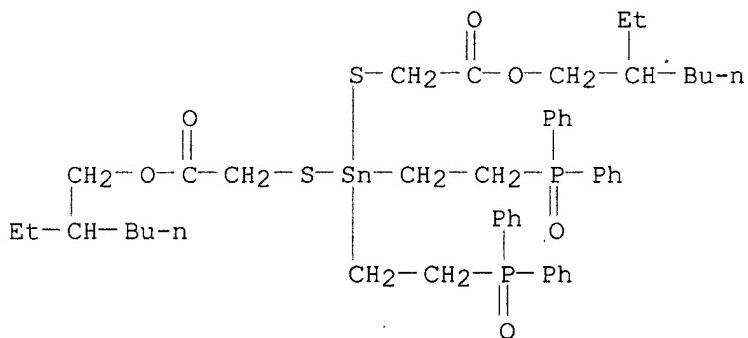
CODEN: GWXXBX

DT Patent
 LA German
 IC C07F009-40
 CC 29-8 (Organometallic and Organometalloidal Compounds)
 Section cross-reference(s): 35, 36

FAN.CNT 1

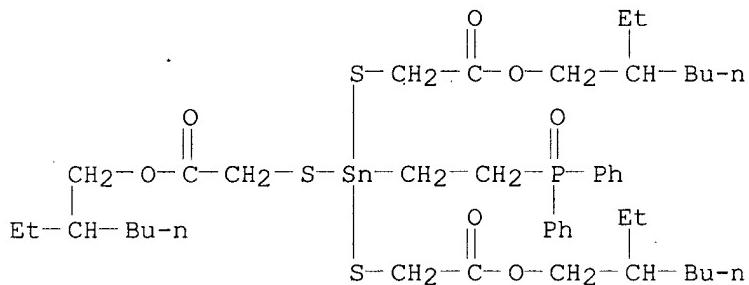
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 2736158	A1	19790222	DE 1977-2736158	19770811
AB	Title compds., [R1R2P(O)CHR3CR4R5]2SnX2 and R1R2P(O)CHR3CR4R5SnX3 [R1, R2 = OH, halo, amino, alkyl, aryl, alkoxy, aryloxy; R3-R5 = H, alkyl, aryl; X = Cl, Br, iodo] were prepd. by the reaction of R1R2P(O)CR3:CR4R5 with Sn and HCl. Thus, 0.5 mol H2C:CHP(O)(OBu)2, 0.25 mol Sn, and 1.5 mol HCl gave a mixt. of 80% [(BuO)2P(O)CH2CH2]2SnCl12 (I) and 20% (BuO)2P(O)CH2CH2SnCl13 (II). The reaction of 0.2 equiv. I and II with 0.2 mol HSCH2CO2CH2CHET(CH2)3Me gave 84.6 g [(BuO)2P(O)CH2CH2]2Sn[SCH2CO2CH2CHET(CH2)3Me]2 and (BuO)2P(O)CH2CH2Sn[SCH2CO2CH2CHET(CH2)3Me]3, useful as stabilizers for polyvinyl chloride.				
ST	stabilizer polyvinyl chloride; carboxyalkylthiostannylethanephosphonate polymer stabilizer; phosphonate carboxyalkylthiostannylethane; stannylethanephosphonate thioether carboxyalkyl; mercaptoacetate reaction chlorostannane; vinylphosphonate tin hydrogen chloride reaction				
IT	Polymers, uses and miscellaneous (stabilizers, carboxyalkylthiostannylalkanephosphonates and -phosphinate)				
IT	70241-31-5P	70241-32-6P	70241-33-7P	70241-34-8P	
	RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation) (prepn. and reaction with thioglycolate)				
IT	70241-11-1P	70241-12-2P	70241-48-4P		
	70241-49-5P	70241-50-8P	70241-51-9P		
	RL: SPN (Synthetic preparation); PREP (Preparation) (prepn. and stabilizing activity for polyvinyl chlorides)				
IT	70241-35-9P	70241-36-0P	70241-37-1P	70241-38-2P	70241-39-3P
	70241-40-6P	70241-41-7P	70241-42-8P	70241-43-9P	70241-44-0P
	70241-45-1P	70241-46-2P	70241-47-3P		
	RL: SPN (Synthetic preparation); PREP (Preparation) (prepn. of)				
IT	7659-86-1				
	RL: RCT (Reactant) (reaction of, with chlorostannylalkanephosphonates and -phosphinates)				
IT	682-76-8	727-16-2	4124-95-2	4645-32-3	4708-07-0
	53314-64-0	63314-88-5	70241-52-0		5238-94-8
	RL: RCT (Reactant) (reaction of, with tin and hydrogen chloride)				
IT	9002-86-2				
	RL: RCT (Reactant) (stabilizers for, carboxyalkylthiostannylalkanephosphonates as)				
IT	70241-11-1P	70241-12-2P	70241-48-4P		
	70241-49-5P	70241-50-8P	70241-51-9P		
	RL: SPN (Synthetic preparation); PREP (Preparation) (prepn. and stabilizing activity for polyvinyl chlorides)				
RN	70241-11-1	HCAPLUS			
CN	8-Oxa-3,5-dithia-4-stannatetradecanoic acid, 4,4-bis[2-(diphenylphosphinyl)ethyl]-10-ethyl-7-oxo-, 2-ethylhexyl ester (9CI) (CA INDEX NAME)				

No review



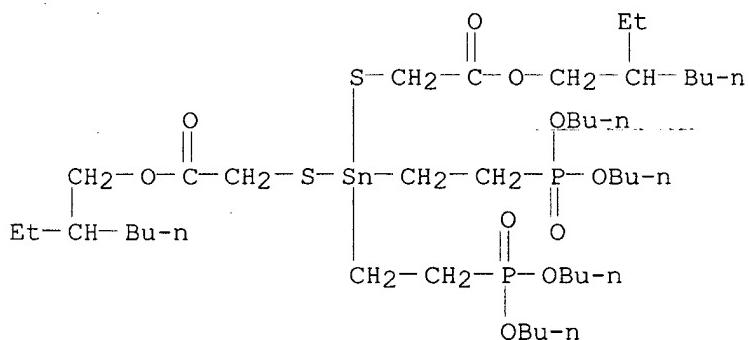
RN 70241-12-2 HCPLUS

CN 8-Oxa-3,5-dithia-4-stannatetradecanoic acid, 4-[2-(diphenylphosphinyl)ethyl]-10-ethyl-4-[(2-[(2-ethylhexyl)oxy]-2-oxoethyl]thio]-7-oxo-, 2-ethylhexyl ester (9CI) (CA INDEX NAME)



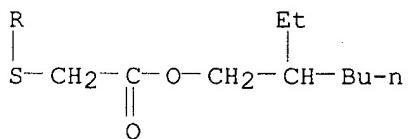
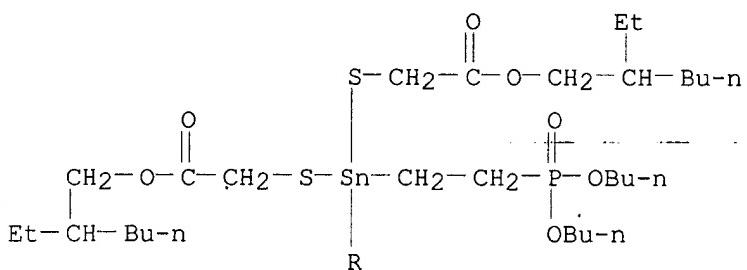
RN 70241-48-4 HCPLUS

CN 8-Oxa-3,5-dithia-4-stannatetradecanoic acid, 4,4-bis[2-(dibutoxyphosphinyl)ethyl]-10-ethyl-7-oxo-, 2-ethylhexyl ester (9CI) (CA INDEX NAME)

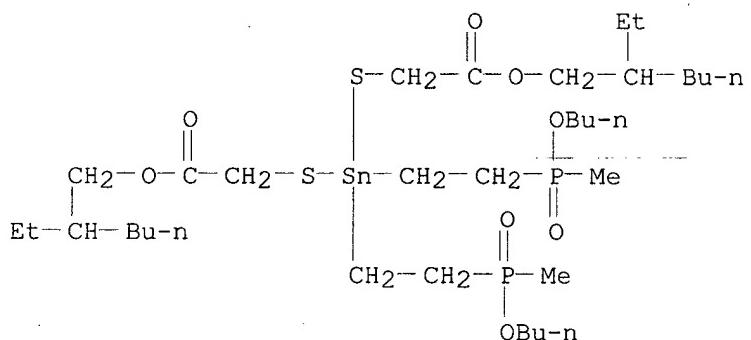


RN 70241-49-5 HCPLUS

CN 8-Oxa-3,5-dithia-4-stannatetradecanoic acid, 4-[2-(dibutoxyphosphinyl)ethyl]-10-ethyl-4-[(2-[(2-ethylhexyl)oxy]-2-oxoethyl]thio]-7-oxo-, 2-ethylhexyl ester (9CI) (CA INDEX NAME)

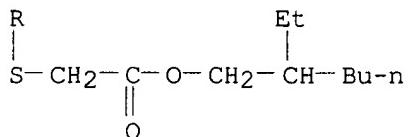
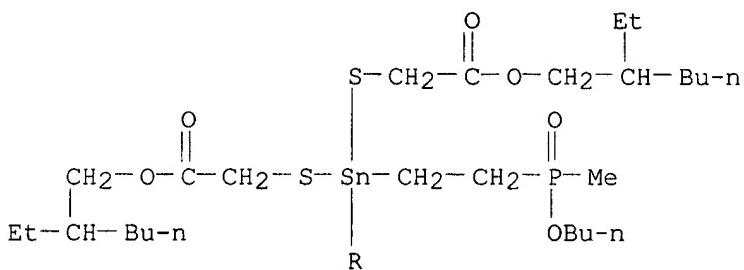


RN 70241-50-8 HCPLUS

CN 8-Oxa-3,5-dithia-4-stannatetradecanoic acid, 4,4-bis[2-(butoxymethylphosphinyl)ethyl]-10-ethyl-7-oxo-, 2-ethylhexyl ester (9CI)
(CA INDEX NAME)

RN 70241-51-9 HCPLUS

CN 8-Oxa-3,5-dithia-4-stannatetradecanoic acid, 4-[2-(butoxymethylphosphinyl)ethyl]-10-ethyl-4-[[2-[(2-ethylhexyl)oxy]-2-oxoethyl]thio]-7-oxo-, 2-ethylhexyl ester (9CI) (CA INDEX NAME)



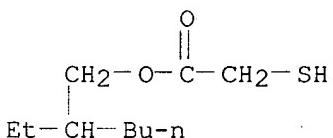
IT 7659-86-1

RL: RCT (Reactant)

(reaction of, with chlorostannyllalkanephosphonates and -phosphinates)

RN 7659-86-1 HCAPLUS

CN Acetic acid, mercapto-, 2-ethylhexyl ester (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



L55 ANSWER 6 OF 38 HCAPLUS COPYRIGHT 2002 ACS

AN 1979:72863 HCAPLUS

DN 90:72863

TI Heat stabilizer composition for halogenated resins

IN Bohen, Joseph Michael; Toukan, Sameeh Said

PA Pennwalt Corp., USA

SO U.S., 11 pp.

CODEN: USXXAM

DT Patent

LA English

IC C08K005-59

NCL 260045750B

CC 36-6 (Plastics Manufacture and Processing)

Section cross-reference(s): 23

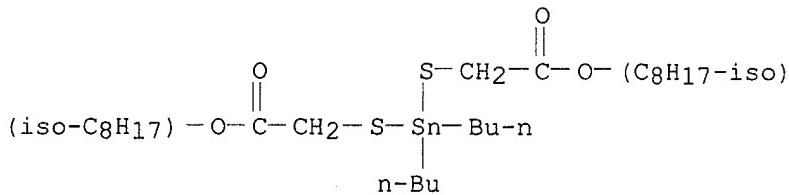
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 4115352	A	19780919	US 1977-799862	19770523 <--
	CA 1104805	A1	19810714	CA 1978-299621	19780323
	NL 7804393	A	19781127	NL 1978-4393	19780425
	NL 187271	B	19910301		
	NL 187271	C	19910801		
	BE 866428	A1	19780814	BE 1978-187152	19780426
	GB 1594046	A	19810730	GB 1978-16550	19780426

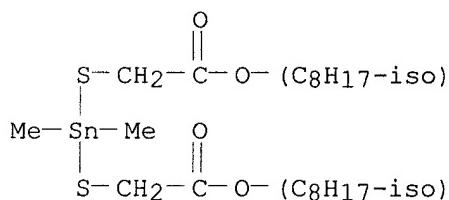
FR 2392074	A1	19781222	FR 1978-13690	19780509
FR 2392074	B1	19830107		
BR 7803206	A	19790320	BR 1978-3206	19780519
JP 53144944	A2	19781216	JP 1978-60080	19780522
JP 62011019	B4	19870310		
ES 470078	A1	19791001	ES 1978-470078	19780522
DE 2822508	A1	19781214	DE 1978-2822508	19780523
DE 2822508	C2	19900802		
PRAI US 1977-799862		19770523		
AB	Mixts. of an alkali or alk. earth metal salt (prepd. from the metal alkoxide) of a mercaptan or mercapto acid with a S-contg. organotin or mercury compd. (and optionally an overbased org. complex of an alk. earth metal carbonate) are synergistic heat stabilizers for PVC [9002-86-2]. Thus, 100 parts PVC contg. 1.5 parts dibutyltin bis(isooctyl thioglycolate) (I) [25168-24-5] and 1.5 parts barium bis(isooctyl thioglycolate) (II) [66368-81-8] [prepd. from Ba(OMe) ₂ [2914-23-0]] plus the usual processing aids and additives had heat failure time (415.degree.) on a Brabender plastograph 37 min, compared to 20 or 4 min for PVC contg. only I or II, resp.			
ST	PVC heat stabilization; mercaptocarboxylate salt heat stabilizer; tin thioglycolate heat stablizer; barium thiol salt			
IT	Heat stabilizers (alkali or alk. earth metal mercaptides, contg. organotin or antimony compds., for PVC)			
IT	9002-86-2 RL: USES (Uses) (heat stabilizers for, alkali or alk. earth mercaptides contg. organotin or antimony compds. as)			
IT	25168-24-5 26636-01-1 27288-44-4 54849-38-6 59118-76-2 65291-38-5 RL: MOA (Modifier or additive use); USES (Uses) (heat stabilizers, contg. alkali or alk. earth mercaptides, for PVC)			
IT	513-77-9D, overbased org. complexes RL: MOA (Modifier or additive use); USES (Uses) (heat stabilizers, contg. alkali or alk. earth metal mercaptides and antimony and organotin compds., for PVC)			
IT	59118-79-5 RL: MOA (Modifier or additive use); USES (Uses) (heat stabilizers, contg. barium carbonate overbased org. complex and barium bis(mercaptoethyl oleate), for PVC)			
IT	16023-01-1 29820-13-1 56846-21-0 62828-68-6 68812-90-8 68812-91-9 69128-09-2 69128-10-5 RL: MOA (Modifier or additive use); USES (Uses) (heat stabilizers, contg. organotin or mercury compds., for PVC)			
IT	66368-81-8P 66368-85-2P 68893-63-0P 69128-07-0P 69128-08-1P RL: PREP (Preparation) (manuf. of, as heat stabilizers for PVC)			
IT	107-96-0 112-55-0 25103-09-7 RL: RCT (Reactant) (reaction of, with alkali or alk. earth metal alkoxides)			
IT	124-41-4 2914-17-2 2914-23-0 RL: RCT (Reactant) (reaction of, with thiols)			
IT	25168-24-5 26636-01-1 54849-38-6 59118-76-2 65291-38-5 RL: MOA (Modifier or additive use); USES (Uses) (heat stabilizers, contg. alkali or alk. earth mercaptides, for PVC)			

*Salt not
ester*

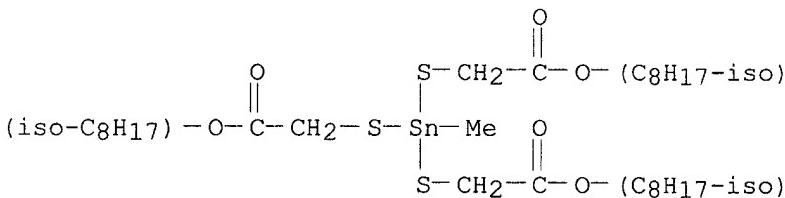
RN 25168-24-5 HCPLUS

CN Acetic acid, 2,2'-(dibutylstannylene)bis(thio)bis-, diisooctyl ester
(9CI) (CA INDEX NAME)

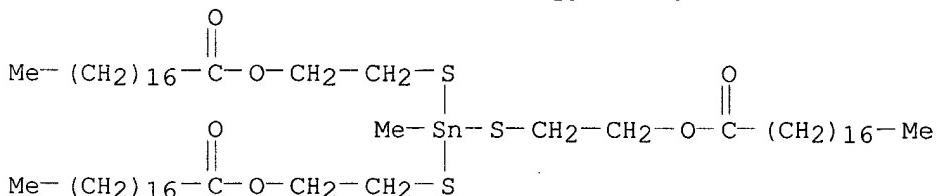
RN 26636-01-1 HCPLUS

CN Acetic acid, 2,2'-(dimethylstannylene)bis(thio)bis-, diisooctyl ester
(9CI) (CA INDEX NAME)

RN 54849-38-6 HCPLUS

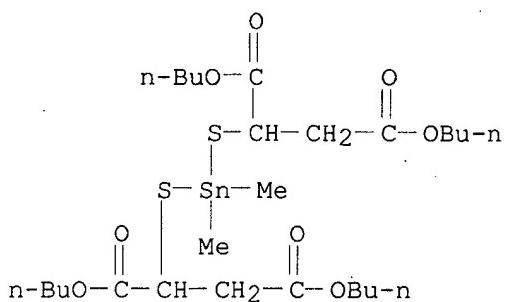
CN Acetic acid, 2,2',2''-(methylstannylidyne)tris(thio)tris-, triisooctyl ester
(9CI) (CA INDEX NAME)

RN 59118-76-2 HCPLUS

CN Octadecanoic acid, (methylstannylidyne)tris(thio-2,1-ethanediyl) ester
(9CI) (CA INDEX NAME)

RN 65291-38-5 HCPLUS

CN Butanedioic acid, 2,2'-(dimethylstannylene)bis(thio)bis-, tetrabutyl ester
(9CI) (CA INDEX NAME)



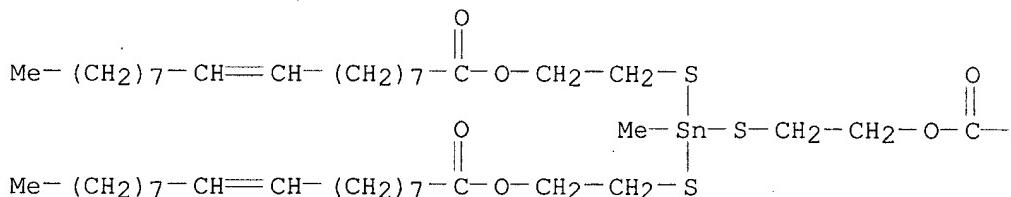
IT 59118-79-5

RL: MOA (Modifier or additive use); USES (Uses)
 (heat stabilizers, contg. barium carbonate overbased org. complex and
 barium bis(mercaptoethyl oleate), for PVC)

RN 59118-79-5 HCPLUS

CN 9-Octadecenoic acid (9Z)-, (methylstannylidyne)tris(thio-2,1-ethanediyl)ester (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B

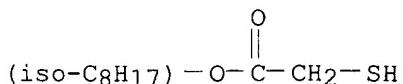
 $-\text{(CH}_2)_7-\text{CH}=\text{CH}-\text{(CH}_2)_7-\text{Me}$

IT 25103-09-7

RL: RCT (Reactant)
 (reaction of, with alkali or alk. earth metal alkoxides)

RN 25103-09-7 HCPLUS

CN Acetic acid, mercapto-, isoctyl ester (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

L55 ANSWER 7 OF 38 HCPLUS COPYRIGHT 2002 ACS
AN 1979:55816 HCPLUS

KATHLEEN FULLER EIC 1700/LAW LIBRARY 308-4290

DN 90:55816
 TI Compound of tin and superbasic complex for stabilizing halogenated resins
 IN Bohen, J. M.
 PA Pennwalt Corp., USA
 SO Belg., 31 pp.
 CODEN: BEXXAL
 DT Patent
 LA French
 IC C08K
 CC 36-6 (Plastics Manufacture and Processing)
 FAN.CNT 3

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	BE 867981	A1	19781002	BE 1978-188456	19780609
	US 4177187	A	19791204	US 1977-828703	19770829 <--
PRAI	US 1977-828703		19770829		

AB The stabilization of halogen-contg. polymers by tetrakis(alkylthio)stannanes is improved by addn. of the complexes RnM1.cntdot.xM2An (R = residue of a carboxylic, sulfonic, or phosphonic acid or phenol or thio deriv.; M1, M2 = alkali or alk. earth metal; A = OH-, CO3-2, O-2, SO4-2, HCO3-, S-2; n and m = 1 or 2; x >0). Thus, stirring p-nonylphenol 60.8, Ba(OH)2.cntdot.H2O 138.7, isoctyl alc. 50, nitrated polyisobutylene 57, and light paraffin oil 133 g 5 h at 150.degree. with H2O distn., passing in 19 g/h CO2 for 3 h at 150.degree., and distg. the alc. in vacuo gives 341.3 g soln. (I) contg. 23.1% Ba and 8.45% CO3-2. Compounded PVC [9002-86-2] contg. 1.2 phr Sn(SCH2CO2C8H17-iso)4 [62568-17-6] (prep'd. from HSCH2CO2C8H17-iso [25103-09-7] and SnCl4) and 0.3 phr I heated at 213.degree. becomes gray in 15 min, compared with 3 min in the absence of I, and 6 min with no stabilizer.

Not reverse

ST heat stabilization PVC; tin mercaptide heat stabilizer; thioglycolate tin deriv stabilizer; barium complex heat stabilizer; nonylphenol barium complex stabilizer

IT Heat stabilizers
 (barium complex salts and tin mercaptides, for PVC)

IT 9002-86-2

RL: USES (Uses)

(heat stabilizers for, tin mercaptides and barium complex salts as)

IT 62568-17-6 69039-16-3 69039-17-4

RL: MOA (Modifier or additive use); USES (Uses)

(heat stabilizers, contg. complex barium salts, for PVC)

IT 104-40-5D, barium salts, complexes with barium carbonate 513-77-9D, complexes with barium nonylphenoxyde

RL: MOA (Modifier or additive use); USES (Uses)

(heat stabilizers, contg. tin mercaptides, for PVC)

IT 7646-78-8, reactions

RL: RCT (Reactant)

(reaction of, with isoctyl mercaptoacetate)

IT 25103-09-7

RL: RCT (Reactant)

(reaction of, with stannic chloride)

IT 109-79-5

RL: RCT (Reactant)

(reaction of, with stannic chloride and isoctyl mercaptoacetate)

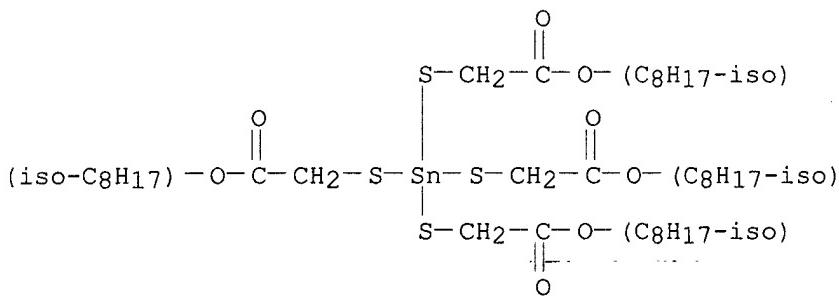
IT 62568-17-6 69039-16-3 69039-17-4

RL: MOA (Modifier or additive use); USES (Uses)

(heat stabilizers, contg. complex barium salts, for PVC)

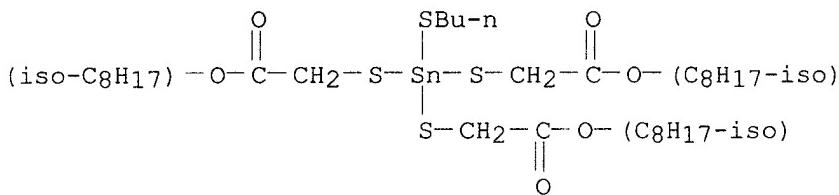
RN 62568-17-6 HCAPLUS

CN Acetic acid, 2,2',2'',2'''-[stannanetetrayltetrakis(thio)]tetrakis-, tetraisoctyl ester (9CI) (CA INDEX NAME)



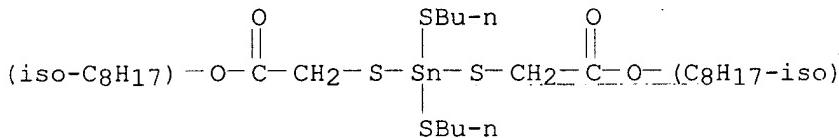
RN 69039-16-3 HCPLUS

CN Acetic acid, 2,2',2'''-[(butylthio)stannylidyne]tris(thio)]tris-, triisooctyl ester (9CI) (CA INDEX NAME)



RN 69039-17-4 HCPLUS

CN Acetic acid, 2,2'-[bis(butylthio)stannylidyne]bis(thio)]bis-, diisooctyl ester (9CI) (CA INDEX NAME)

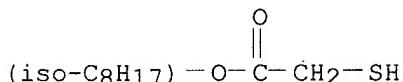


IT 25103-09-7

RL: RCT (Reactant)
(reaction of, with stannic chloride)

RN 25103-09-7 HCPLUS

CN Acetic acid, mercapto-, isoctyl ester (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



L55 ANSWER 8 OF 38 HCPLUS COPYRIGHT 2002 ACS

AN 1978:511378 HCPLUS

DN 89:111378

TI Low-odor stabilizers for halogen-containing resins

IN Kitano, Yoshikazu

PA Nitto Kasei Co., Ltd., Japan
 SO Japan. Kokai, 3 pp.
 CODEN: JKXXAF

DT Patent

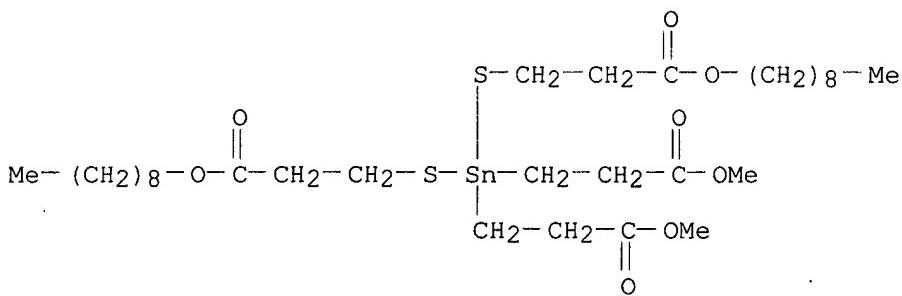
LA Japanese

IC C08L027-02

CC 36-6 (Plastics Manufacture and Processing)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 53035752	A2	19780403	JP 1976-111938	19760914
AB	Halogen-contg. resins were stabilized with low-odor (MeO2CCH2CH2)2Sn(SCH2CH2CO2R)2 (I; R = C9-12 alkyl). For example, 59.4 g Sn foil and 87.9 g Me acrylate [96-33-3] in 200 mL benzene were bubbled with HCl to give 154.6 g (MeO2CCH2CH2)2SnCl2 [10175-01-6] which (109.1 g) was treated with 139.5 g nonyl 3-mercaptopropionate [67231-93-0]] in benzene in the presence of NH3 to give 99% I (R = nonyl) (II) [67231-94-1]. PVC [9002-86-2] was mixed with 2 phr II at 170.degree. for 3 min and foamed to a 0.5 mm-thick odorless sheet free from discoloration at 190.degree. for >30 min.				<i>Not reviewed</i>
ST	tin stabilizer odorless PVC; heat stabilizer tin PVC				
IT	Heat stabilizers (bis(carbomethoxyethyl)tin bis(nonyl mercaptopropionate), low-odor, for PVC)				
IT	9002-86-2 RL: USES (Uses) (heat stabilizers for, low-odor, bis(carbomethoxyethyl)tin bis(nonyl mercaptopropionate) as)				
IT	67231-94-1P RL: MOA (Modifier or additive use); PREP (Preparation); USES (Uses) (heat stabilizers, low-order, for PVC, manuf. of)				
IT	10175-01-6P RL: PREP (Preparation) (manuf. and reaction with nonyl mercaptopropionate)				
IT	7440-31-5, reactions RL: RCT (Reactant) (reaction of, with Me acrylate)				
IT	67231-93-0 RL: RCT (Reactant) (reaction of, with bis(carbomethoxyethyl)tin chloride)				
IT	96-33-3 RL: RCT (Reactant) (reaction of, with tin)				
IT	67231-94-1P RL: MOA (Modifier or additive use); PREP (Preparation); USES (Uses) (heat stabilizers, low-order, for PVC, manuf. of)				
RN	67231-94-1 HCPLUS				
CN	10-Oxa-4,6-dithia-5-stannanonadecanoic acid, 5,5-bis(3-methoxy-3- oxopropyl)-9-oxo-, nonyl ester (9CI) (CA INDEX NAME)				



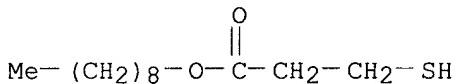
IT 67231-93-0

RL: RCT (Reactant)

(reaction of, with bis(carbomethoxyethyl)tin chloride)

RN 67231-93-0 HCAPLUS

CN Propanoic acid, 3-mercaptop-, nonyl ester (9CI) (CA INDEX NAME)



L55 ANSWER 9 OF 38 HCAPLUS COPYRIGHT 2002 ACS

AN 1978:509971 HCAPLUS

DN 89:109971

TI Organotin compounds

IN Dworkin, Robert Dally; Ejk, Adam Joseph

PA M and T Chemicals, Inc., USA

SO Ger. Offen., 19 pp.

CODEN: GWXXBX

DT Patent

LA German

IC C07F007-22

CC 29-8 (Organometallic and Organometalloidal Compounds)

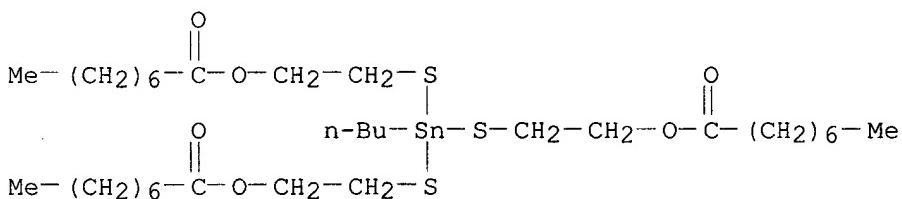
Section cross-reference(s): 35, 36

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 2749082	A1	19780511	DE 1977-2749082	19771102
	DE 2749082	C2	19870402		
	US 4104292	A	19780801	US 1976-738183	19761102 <--
	GB 1558898	A	19800109	GB 1977-42712	19771013
	BE 860052	A1	19780215	BE 1977-182010	19771024
	FR 2369287	A1	19780526	FR 1977-32045	19771025
	FR 2369287	B1	19830401		
	NL 7711836	A	19780505	NL 1977-11836	19771027
	CA 1085414	A1	19800909	CA 1977-289804	19771028
	PL 109243	B1	19800531	PL 1977-201837	19771029
	BR 7707276	A	19780725	BR 1977-7276	19771031
	JP 53063317	A2	19780606	JP 1977-130380	19771101
	JP 59021870	B4	19840522		
	CS 209884	P	19811231	CS 1977-7153	19771102
PRAI	US 1976-738183		19761102		
AB	The title compds., $R_qSn[S(CH_2)_mO_2CR_1]^{4-q}$ [R, R1 = C1-20 alkyl, cycloalkyl, aryl, aralkyl, alkaryl; m = 2, 3; q = 1-2], useful as polymer stabilizers,				

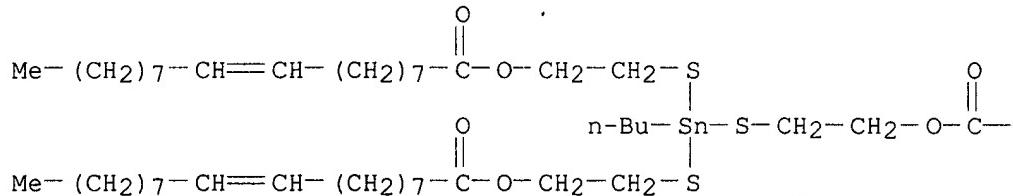
were prep'd. Thus, 0.1 mol BuSnCl₃, 0.3 mol HSCH₂CH₂OH, and 43.3 g caprylic acid gave 93% BuSn[SCH₂CH₂O₂C(CH₂)₆Me] ₃. Similarly prep'd. were (Z)-BuSn[SCH₂CH₂O₂C(CH₂)₇CH:CH(CH₂)₇Me] ₃ and S[SnBu(SCH₂CH₂O₂C(CH₂)₆Me) ₂] ₂

ST polymer stabilizer butylstannylthioethyl alkanoate; stannane
alkanoyloxyethylthio; sulfide alkylstannyl
IT Polymers, uses and miscellaneous
RL: USES (Uses)
(stabilizers for, alkyltin mercaptoethyl alkanoates as)
IT 60-24-2
RL: RCT (Reactant)
(esterification of alkanoic acids by)
IT 124-07-2, reactions
RL: RCT (Reactant)
(esterification of, with mercaptoethanols and treatment with butyltin
trichlorides)
IT 59118-80-8P 67361-76-6P 67395-86-2P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of)
IT 59118-78-4
RL: RCT (Reactant)
(reaction with alkylhalostannanes)
IT 1118-46-3
RL: RCT (Reactant)
(reaction with mercaptoalkyl alkanoates)
IT 67361-77-7
RL: RCT (Reactant)
(stabilizer for polyvinylchloride)
IT 9002-86-2
RL: RCT (Reactant)
(stabilizers for, dibutyltin bis(2-mercaptopropyl oleate) as)
IT 112-62-9
RL: RCT (Reactant)
(tin esterification of, with mercaptomethanol and reaction with
butyltin trichloride)
IT 59118-80-8P 67361-76-6P 67395-86-2P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of)
RN 59118-80-8 HCAPLUS
CN Octanoic acid, (butylstannylidene)tris(thio-2,1-ethanediyl) ester (9CI)
(CA INDEX NAME)

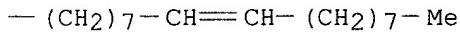


RN 67361-76-6 HCPLUS
CN 9-Octadecenoic acid (9Z)-, (butylstannylidyne)tris(thio-2,1-ethanediyl)
ester (9CI) (CA INDEX NAME)

PAGE 1-A

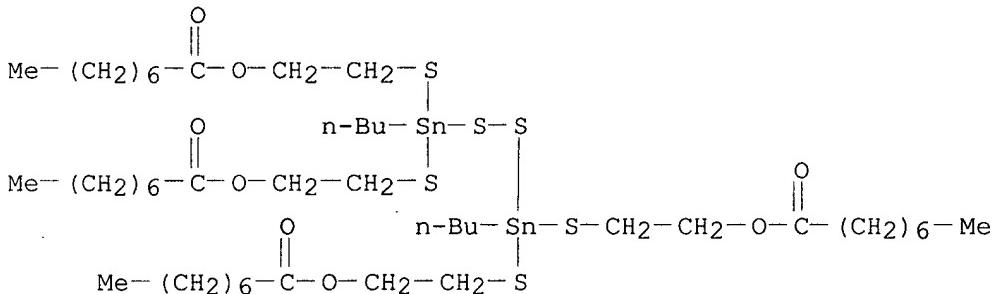


PAGE 1-B



RN 67395-86-2 HCAPLUS

CN Octanoic acid, 4,7-dibutyl-4,7-bis[[2-[(1-oxooctyl)oxy]ethyl]thio]-3,5,6,8-tetrathia-4,7-distannadecane-1,10-diyl ester (9CI) (CA INDEX NAME)



IT 59118-78-4

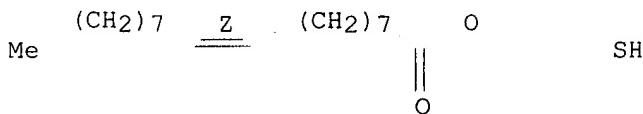
RL: RCT (Reactant)

(reaction with alkylhalostannanes)

RN 59118-78-4 HCAPLUS

CN 9-Octadecenoic acid (9Z)-, 2-mercaptoproethyl ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.



IT 67361-77-7

RL: RCT (Reactant)

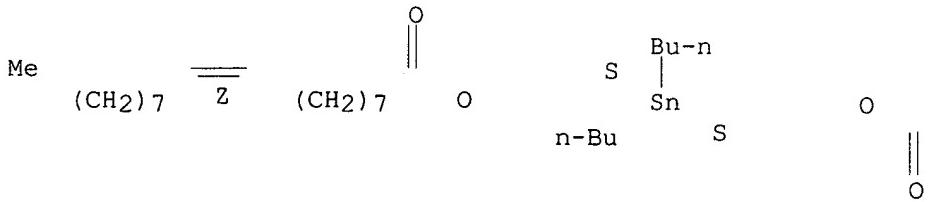
(stabilizer for polyvinylchloride)

RN 67361-77-7 HCAPLUS

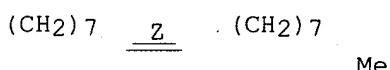
CN 9-Octadecenoic acid (9Z)-, (dibutylstannylene)bis(thio-2,1-ethanediyl)ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A



PAGE 1-B



L55 ANSWER 10 OF 38 HCAPLUS COPYRIGHT 2002 ACS

AN 1978:490663 HCAPLUS

DN 89:90663

TI Liquid stabilizer systems and vinyl halide resin compositions containing them

IN Hoch, Samuel; Ceprini, Mario Q.; Szabo, Emery

PA Tenneco Chemicals, Inc., USA

SO U.S., 7 pp.

CODEN: USXXAM

DT Patent

LA English

IC C08K005-58

NCL 260045750S

CC 36-6 (Plastics Manufacture and Processing)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 4059562	A	19771122	US 1977-779650	19770321 <--
	JP 54143455	A2	19791108	JP 1978-50263	19780428

PRAI US 1977-779650 19771122

AB Organotin ethanolmercaptides contg. a higher alc. component and an alkyl acid phosphate are good heat stabilizers for PVC [9002-86-2]. Thus, laurylmercaptan [112-55-0] 130.6, 2-mercaptoethanol [60-24-2] 98.7, butylstannoic acid 131.8, and 2-methyl-2,4-pentanediol [107-41-5] 159.1 g were heated at 90-5.degree. at 110-20 mm until 22.7 g water was collected. A 4-methyl-2-pentanol [108-11-2]-P205 mixt. (2.5 g) was added to give a soln. of monobutyltin mono(dodecylmercaptide) di(ethanolmercaptide) (I) [65411-05-4]. A PVC formulation contg. 0.40 part I/100 parts resin developed a color (off-white) after 8 min at 178.degree., compared with 6 and 8 (slightly yellow to yellow) for formulations contg. com. stabilizers.

ST organotin ethanolmercaptide stabilizer PVC; heat stabilizer PVC

IT Heat stabilizers
(organotin ethanolmercaptides, for PVC)

IT Alcohols, uses and miscellaneous
 (C12-15-alkyl, organotin ethanolmercaptide heat stabilizers contg.)

IT 9002-86-2
 RL: USES (Uses)
 (heat stabilizers for, organotin ethanolmercaptides as)

IT 65411-04-3 65411-05-4 65411-06-5
 65411-07-6 65436-57-9 65436-58-0
 65459-04-3
 RL: MOA (Modifier or additive use); USES (Uses)
 (heat stabilizers, for PVC)

IT 104-76-7 107-41-5 108-11-2D, mixed esters with phosphorus pentoxide
 1314-56-3D, reaction products with methylpentanol
 RL: USES (Uses)
 (organotin ethanolmercaptide heat stabilizers contg.)

IT 25103-09-7
 RL: RCT (Reactant)
 (reaction of, with butylstannoic acid and mercaptoethanol)

IT 1313-82-2, reactions
 RL: RCT (Reactant)
 (reaction of, with butyltin trichloride and mercaptoethanol)

IT 60-24-2
 RL: RCT (Reactant)
 (reaction of, with butyltin trichloride and sodium sulfide)

IT 112-55-0
 RL: RCT (Reactant)
 (reaction of, with dibutyltin dichloride and mercaptoethanol)

IT 818-08-6
 RL: RCT (Reactant)
 (reaction of, with isoctyl thioglycolate and mercaptoethanol)

IT 2273-43-0
 RL: RCT (Reactant)
 (reaction of, with isoctylthioglycolate and mercaptoethanol)

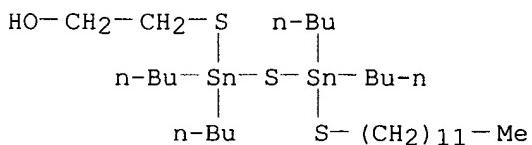
IT 683-18-1
 RL: RCT (Reactant)
 (reaction of, with laurylmercaptan and mercaptoethanol)

IT 1118-46-3
 RL: RCT (Reactant)
 (reaction of, with mercaptoethanol and sodium sulfide)

IT 65411-04-3 65411-05-4 65411-06-5
 65411-07-6 65436-57-9 65436-58-0
 65459-04-3
 RL: MOA (Modifier or additive use); USES (Uses)
 (heat stabilizers, for PVC)

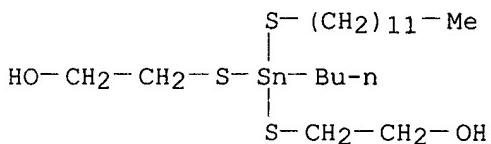
RN 65411-04-3 HCAPLUS

CN Ethanol, 2-[[1,1,3,3-tetrabutyl-3-(dodecylthio)distannathianyl]thio]-
 (9CI) (CA INDEX NAME)

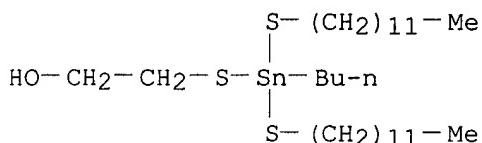


RN 65411-05-4 HCAPLUS

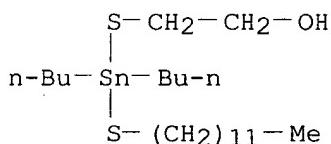
CN Ethanol, 2,2'-[[butyl(dodecylthio)stannylene]bis(thio)]bis- (9CI) (CA INDEX NAME)



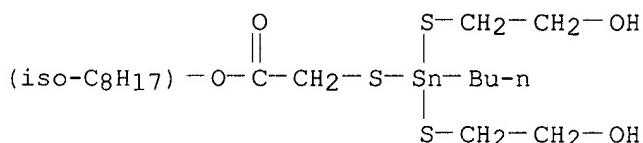
RN 65411-06-5 HCAPLUS
 CN Ethanol, 2-[butylbis(dodecylthio)stanny]thio]- (9CI) (CA INDEX NAME)



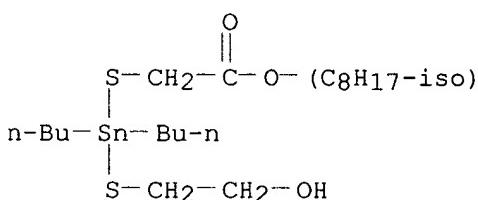
RN 65411-07-6 HCAPLUS
 CN Ethanol, 2-[dibutyl(dodecylthio)stannyl]thio]- (9CI) (CA INDEX NAME)



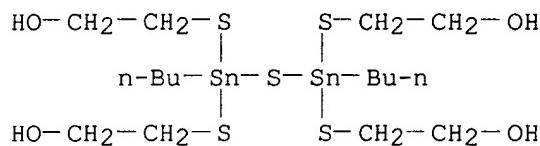
RN 65436-57-9 HCAPLUS
 CN Acetic acid, [butylbis[(2-hydroxyethyl)thio]stannyl]thio]-, isoctyl ester (9CI) (CA INDEX NAME)



RN 65436-58-0 HCAPLUS
 CN Acetic acid, [dibutyl[(2-hydroxyethyl)thio]stannyl]thio]-, isoctyl ester (9CI) (CA INDEX NAME)



RN 65459-04-3 HCAPLUS
 CN Ethanol, 2,2',2'',2'''-[(1,3-dibutyl-1,3-distannathianediylidene)tetrakis(thio)]tetrakis- (9CI) (CA INDEX NAME)



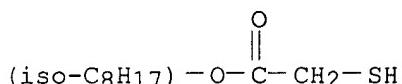
IT 25103-09-7

RL: RCT (Reactant)

(reaction of, with butylstannoic acid and mercaptoethanol)

RN 25103-09-7 HCAPLUS

CN Acetic acid, mercapto-, isoctyl ester (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



L55 ANSWER 11 OF 38 HCAPLUS COPYRIGHT 2002 ACS

AN 1978:121386 HCAPLUS

DN 88:121386

TI Organotin compounds

IN Hoch, Samuel; Szabo, Emery

PA Tenneco Chemicals, Inc., USA

SO Ger. Offen., 21 pp.

CODEN: GWXXBX

DT Patent

LA German

IC C07F007-22

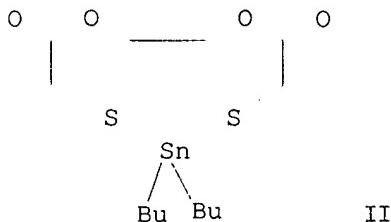
CC 29-8 (Organometallic and Organometalloidal Compounds)

Section cross-reference(s): 35, 36, 37

Not reverse

FAN.CNT 1

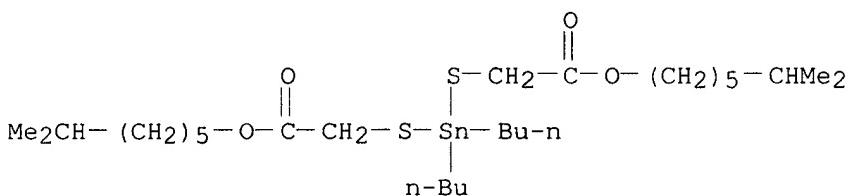
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 2719526	A1	19771215	DE 1977-2719526	19770502
	US 4111903	A	19780905	US 1976-682430	19760503 <--
	GB 1574526	A	19800910	GB 1977-15933	19770418
	JP 52133930	A2	19771109	JP 1977-47973	19770427
	CA 1082726	A1	19800729	CA 1977-277597	19770502
PRAI	US 1976-682430		19760503		
GI					



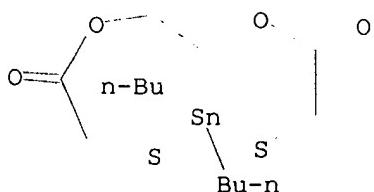
AB The title compds., $[\text{CH}_2\text{O}_2\text{CCH}_2\text{SSnR}_2\text{R}_1]_2$ (I, R = C₁₋₈ alkyl, R₁ = S(CH₂)_nCO₂R₂, SR₂, O₂CCH:CHCO₂R₃, R₂ = C₈₋₁₈ alkyl, R₃ = C₃₋₁₈ alkyl, n = 1, 2), were prep'd. from R₂SnO or R₂SnCl₂, [CH₂O₂CCH₂SH]₂, and R₁H. Thus,

1.86 mol isoctyl thioglycolate, 0.892 mol [CH₂O₂CCH₂SH]₂, and 1.79 mol Bu₂SnO gave 977.2 g I (R = Bu, R₁ = SCH₂CO₂(C₈H₁₇-iso)). Also prepd. were I [R = Bu, R₁ = dodecylthio, O₂CCH:CHCO₂(C₈H₁₇-iso)], Bu₂Sn[SCH₂CO₂(C₈H₁₇-iso)]₂, and II. I were stabilizers for **polyvinyl** chloride.

- ST. **polyvinyl** chloride stabilizer stannyl thioether; **vinyl** polymer stabilizer stannyl thioether; stannyl dibutyl thioether; thioether dibutylstannyl
- IT 6512-94-3P 13468-00-3P 65308-00-1P
65924-20-1P 65924-21-2P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of)
- IT 112-55-0 25103-09-7
RL: RCT (Reactant)
(reaction with ethylene glycol dimercaptoacetate and dibutyltin oxide)
- IT 108-31-6, reactions
RL: RCT (Reactant)
(reaction with isoctyl alc.)
- IT 1653-40-3
RL: RCT (Reactant)
(reaction with maleic anhydride)
- IT 123-81-9
RL: RCT (Reactant)
(reaction with mercaptans and dibutyltin oxide)
- IT 683-18-1 818-08-6
RL: RCT (Reactant)
(reaction with mercaptans and ethylene glycol dimercaptoacetate)
- IT 9002-86-2
RL: PROC (Process)
(stabilization of, with butylstannyl thioethers)
- IT 6512-94-3P 13468-00-3P 65308-00-1P
65924-20-1P 65924-21-2P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of)
- RN 6512-94-3 HCPLUS
- CN 8-Oxa-3,5-dithia-4-stannapentadecanoic acid, 4,4-dibutyl-14-methyl-7-oxo-, 6-methylheptyl ester (9CI) (CA INDEX NAME)



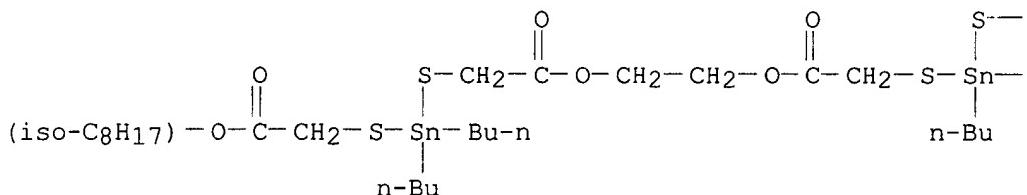
- RN 13468-00-3 HCPLUS
- CN 1,4-Dioxa-7,9-dithia-8-stannacycloundecane-5,11-dione, 8,8-dibutyl- (9CI)
(CA INDEX NAME)



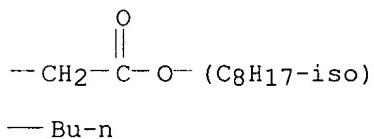
RN 65308-00-1 HCAPLUS

CN 8,11-Dioxa-3,5,14,16-tetrathia-4,15-distannaoctadecanedioic acid,
4,4,15,15-tetrabutyl-7,12-dioxo-, diisooctyl ester (9CI) (CA INDEX NAME)

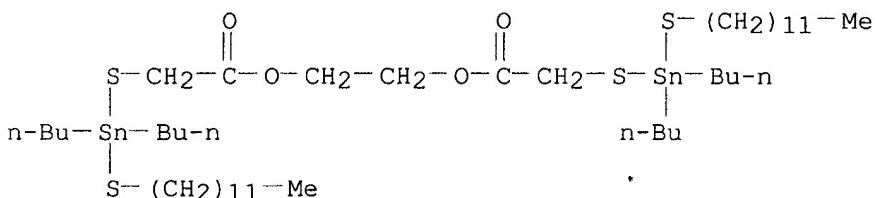
PAGE 1-A



PAGE 1-B



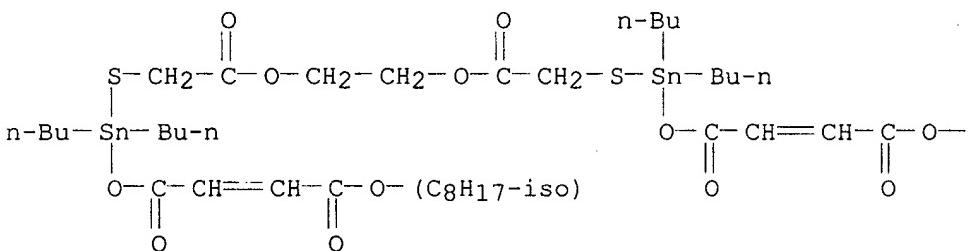
RN 65924-20-1 HCAPLUS

CN Acetic acid, [[dibutyl(dodecylthio)stannyly]thio]-, 1,2-ethanediyl ester
(9CI) (CA INDEX NAME)

RN 65924-21-2 HCAPLUS

CN 5,10,13,18-Tetraoxa-7,16-dithia-6,17-distannadocosa-2,20-dienedioic acid,
6,6,17,17-tetrabutyl-4,9,14,19-tetraoxo-, diisooctyl ester, (Z,Z)- (9CI)
(CA INDEX NAME)

PAGE 1-A



PAGE 1-B

— (C₈H₁₇-iso)

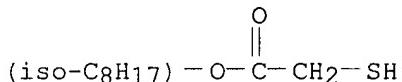
IT 25103-09-7

RL: RCT (Reactant)

(reaction with ethylene glycol dimercaptoacetate and dibutyltin oxide)

RN 25103-09-7 HCAPLUS

CN Acetic acid, mercapto-, isoctyl ester (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



L55 ANSWER 12 OF 38 HCAPLUS COPYRIGHT 2002 ACS

AN 1977:406982 HCAPLUS

DN 87:6982

TI Organotin dihalides useful as stabilizers

PA AKZO N. V., Belg.

SO Belg., 20 pp.

CODEN: BEXXAL

DT Patent

LA French

IC C07F

CC 36-6 (Plastics Manufacture and Processing)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI BE 843387 A1 19761018 BE 1976-168289 19760625

AB Powd. Sn was treated with an olefin and a hydrogen halide under mild conditions of temp. and pressure in the absence of a catalyst to give high yields of X₂Sn (CRR₁CH₂COR₂)₂ (I) and X₃SnCRR₁CH₂COR₂ (II) (X = Cl, Br; R = H, Me; R₁ = H, Me; R₂ = OMe, OEt, Me, Cl, Bu) which were further reacted with thioglycolates, thiols, and acids to give products which stabilized PVC [9002-86-2] at 185.degree. for longer periods and at lower concns. than similar dibutyltin compds. Thus, 60 g powd Sn and 67.4 g Me acrylate [96-33-3] were mixed in 140 mL Et₂O and 87 g HCl was added in 3 h at 20.degree.. The Et₂O was removed and 300 mL CHCl₃ was added to give 177.2 g of mixt. of 37% I and 27% II (X = Cl; R = R₁ = H; R₂ = OMe). The I product obtained (54.6 g) was treated with 64.2 g isoctyl thioglycolate [25103-09-7] in the presence of NaHCO₃ 2 h at 50-60.degree. to give a product which acted as a heat stabilizer for PVC and, at 1% concn., gave better results than dibutyltin dithioglycolate in 70 h at 185.degree..

ST PVC organotin heat stabilizer; tin compd PVC
stabilizerIT Heat stabilizers
(organotin compds., for PVC)

IT 9002-86-2

RL: USES (Uses)
(heat stabilizers for, organotin compds. as)Note
revised

IT 61460-21-7 61470-35-7 61470-36-8 61470-37-9
 RL: MOA (Modifier or additive use); USES (Uses)
 (heat stabilizers, for PVC)

IT 10175-01-6P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
 (prepn. and reaction of, with thioglycolates, thiols and acids)

IT 10175-02-7P 10175-07-2P 10177-71-6P 18996-10-6P 59586-03-7P
 59586-06-0P 59586-10-6P 59586-13-9P 61470-32-4P 61470-33-5P
 61470-34-6P
 RL: PREP (Preparation)
 (prepn. of)

IT 18990-10-8P 59586-09-3P
 RL: PREP (Preparation)
 (prepn. of,)

IT 7440-31-5, reactions
 RL: RCT (Reactant)
 (reaction of, with olefins and hydrogen halides)

IT 7647-01-0, reactions 10035-10-6, reactions
 RL: RCT (Reactant)
 (reaction of, with olefins and tin)

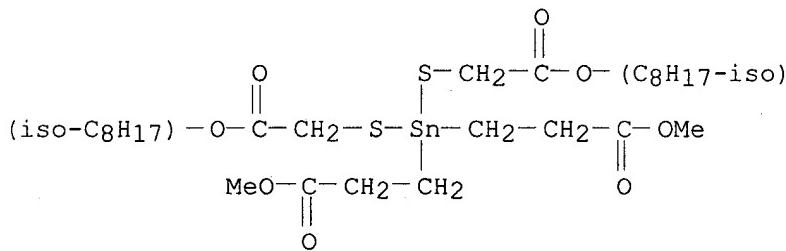
IT 112-55-0 143-07-7, reactions 925-21-3 25103-09-7
 RL: RCT (Reactant)
 (reaction of, with organotin halides)

IT 78-94-4, reactions 80-62-6 96-33-3 140-88-5 141-32-2 141-79-7
 814-68-6
 RL: RCT (Reactant)
 (reaction of, with tin and hydrogen halides)

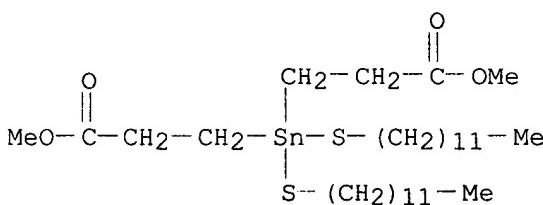
IT 61460-21-7 61470-36-8
 RL: MOA (Modifier or additive use); USES (Uses)
 (heat stabilizers, for PVC)

RN 61460-21-7 HCPLUS

CN Propanoic acid, 3,3'-[bis[[2-(isooctyloxy)-2-oxoethyl]thio]stannylene]bis-, dimethyl ester (9CI) (CA INDEX NAME)



RN 61470-36-8 HCPLUS
 CN Propanoic acid, 3,3'-[bis(dodecylthio)stannylene]bis-, dimethyl ester
 (9CI) (CA INDEX NAME)



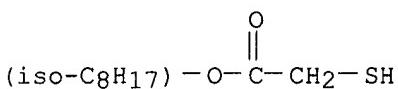
IT 25103-09-7

RL: RCT (Reactant)

(reaction of, with organotin halides)

RN 25103-09-7 HCAPLUS

CN Acetic acid, mercapto-, isoctyl ester (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



L55 ANSWER 13 OF 38 HCAPLUS COPYRIGHT 2002 ACS

AN 1977:56264 HCAPLUS

DN 86:56264

TI Heat stabilizers for vinyl chloride resins

IN Mototani, Hideo

PA Nitto Kasei Co., Ltd., Japan

SO Japan. Kokai, 7 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC C08L027-00

CC 36-6 (Plastics Manufacture and Processing)

Section cross-reference(s): 29

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 51117740	A2	19761016	JP 1975-43990	19750410
AB	A dialkyltin oxide is treated with a mercapto acid alkyl ester in 1:1 equiv. ratio to give a dialkyltin bis(alkyl mercaptocarboxylate). A little amt. of Zn compd. is added before or after the reaction of the oxide with the ester to give a stabilizer compn. for a vinyl chloride resin. Thus, a mixt. of 357.8 g dioctyltin oxide [870-08-6] and 381.3 g isoctyl mercaptoacetate [25103-09-7] was heated 2 h at 80-90.degree. to give dioctyltin bis(isoctyl mercaptoacetate) [26401-97-8] which was mixed with 10% ZnCl ₂ , giving a stabilizer compn. A mixt. of 100 parts PVC [9002-86-2] and 2 parts stabilizer compn. was kneaded 3 min at 180.degree. to give a 0.3-mm sheet with improved heat resistance compared with a control when ZnCl ₂ was omitted under the same conditions.	<i>Not reverse</i>			
ST	heat stabilizer chlorinated resin; vinyl chloride resin compn; organotin compd heat stabilizer; zinc compd heat stabilizer				
IT	Heat stabilizers (dialkyltin bis(alkyltin bis(alkyl mercaptocarboxylate)-zinc compds., for vinyl chloride resins)				
IT	25085-46-5				
	RL: USES (Uses) (graft, heat-resistant compns., contg. organotin compds. and zinc compds.)				
IT	7646-85-7, uses and miscellaneous 25168-24-5 26401-97-8 26636-01-1 27107-88-6 32251-22-2 50788-67-5 61624-94-0		7779-88-6	13847-22-8	
	RL: USES (Uses) (heat stabilizers contg., for vinyl chloride resins)				
IT	9002-86-2				
	RL: USES (Uses)				

(heat-resistant compns., contg. organotin compds. and zinc compds.)

IT 25103-09-7

RL: RCT (Reactant)

(reaction of, with dioctyltin oxide)

IT 870-08-6

RL: RCT (Reactant)

(reaction of, with isoctyl mercaptoacetate)

IT 25168-24-5 26401-97-8 26636-01-1

27107-88-6 32251-22-2 50788-67-5

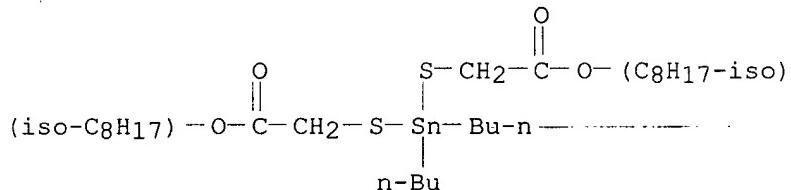
61624-94-0

RL: USES (Uses)

(heat stabilizers contg., for vinyl chloride resins)

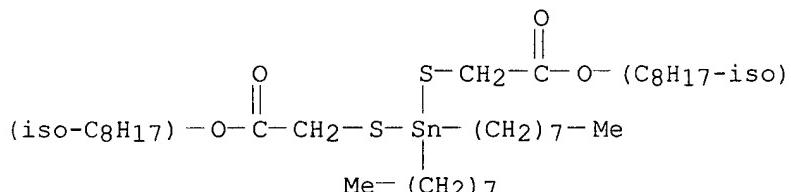
RN 25168-24-5 HCPLUS

CN Acetic acid, 2,2'-(dibutylstannylene)bis(thio)bis-, diisoctyl ester
(9CI) (CA INDEX NAME)



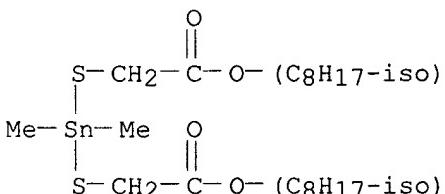
RN 26401-97-8 HCPLUS

CN Acetic acid, 2,2'-(dioctylstannylene)bis(thio)bis-, diisoctyl ester
(9CI) (CA INDEX NAME)



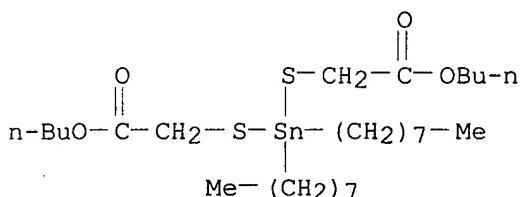
RN 26636-01-1 HCPLUS

CN Acetic acid, 2,2'-(dimethylstannylene)bis(thio)bis-, diisoctyl ester
(9CI) (CA INDEX NAME)

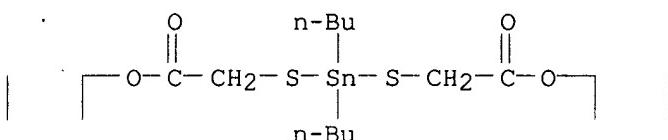


RN 27107-88-6 HCPLUS

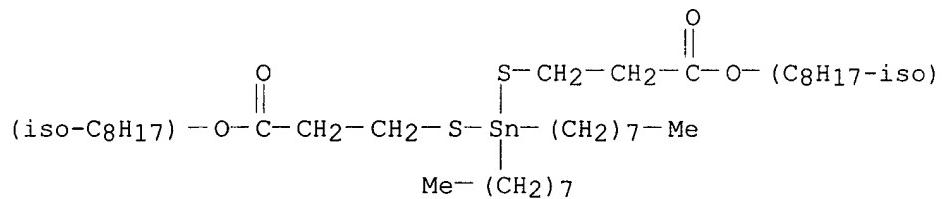
CN 8-Oxa-3,5-dithia-4-stannadodecanoic acid, 4,4-dioctyl-7-oxo-, butyl ester
(9CI) (CA INDEX NAME)



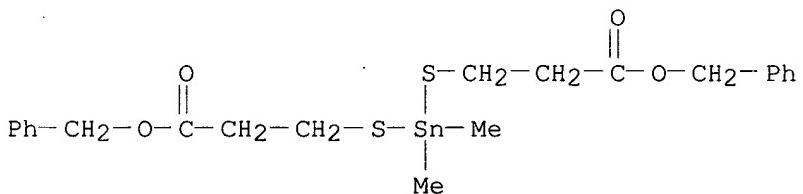
RN 32251-22-2 HCAPLUS
 CN Acetic acid, 2,2'-(dibutylstannylene)bis(thio)bis-, dicyclohexyl ester
 (9CI) (CA INDEX NAME)



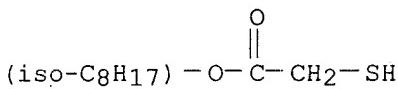
RN 50788-67-5 HCAPLUS
 CN Propanoic acid, 3,3'-(dioctylstannylene)bis(thio)bis-, diisooctyl ester
 (9CI) (CA INDEX NAME)



RN 61624-94-0 HCAPLUS
 CN 2-Oxa-6,8-dithia-7-stannaundecan-11-oic acid, 7,7-dimethyl-3-oxo-1-phenyl-, phenylmethyl ester (9CI) (CA INDEX NAME)



IT 25103-09-7
 RL: RCT (Reactant)
 (reaction of, with dioctyltin oxide)
 RN 25103-09-7 HCAPLUS
 CN Acetic acid, mercapto-, isoctyl ester (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

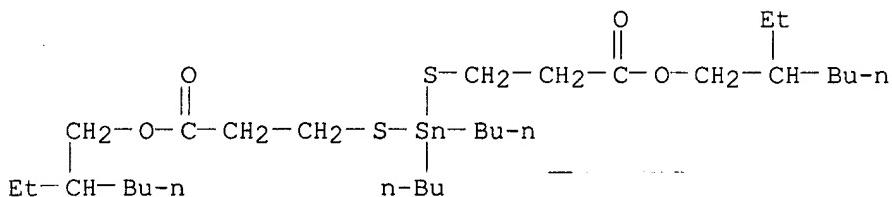


L55 ANSWER 14 OF 38 HCAPLUS COPYRIGHT 2002 ACS
 AN 1977:30526 HCAPLUS
 DN 86:30526
 TI Organotin compounds as nonpoisonous heat stabilizers for poly(
 vinyl chloride)
 IN Ohnishi, Fusamatsu; Motobashi, Akira
 PA Sankyo Organic Chemicals Co., Ltd., Japan
 SO Japan. Kokai, 5 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC C08L027-06
 CC 36-6 (Plastics Manufacture and Processing)
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 51093947	A2	19760818	JP 1975-19491	19750218
AB	A vinyl chloride resin compn. is prep'd., -contg. organotin compds. as nonpoisonous stabilizer. Thus, a mixt. of BuSnCl ₃ [1118-46-3] 98.85, Bu ₂ SuCl ₂ [683-18-1] 1.03, and Bu ₃ SnCl [1461-22-9] 0.12% was treated with NaOH to give a white product which (50.00 g) was treated with 123.21 g 2-ethylhexyl 3-mercaptopropionate [50448-95-8] giving 155.80 g oily substance (LD ₅₀ value for male rat >toreq. 20 g/kg) contg. monobutyltin tris(2-ethylhexyl 3-mercaptopropionate) [61241-05-2] 99.13, dibutyltin bis(2-ethylhexyl 3-mercaptopropionate [53202-61-2] 0.80, and tributyltin mono(2-ethylhexyl 3-mercaptopropionate) [61241-06-3] 0.07%. A mixt. of PVC [9002-86-2] 100, oily substance (as heat stabilizer) 2, and Ca stearate 0.5 part was kneaded to give a 0.6-mm sheet with improved heat resistance compared with a control when dioctyltin bis(isooctyl mercaptopropionate) was used as heat stabilizer under the same conditions.	<i>Not reviewed</i>			
ST	nonpoisonous heat stabilizer PVC; organotin compd heat stabilizer; tin organo heat stabilizer; mercaptopropionatotin butyl heat stabilizer; butylmercaptopropionatotin heat stabilizer				
IT	Heat stabilizers (organotin compds., for PVC)				
IT	53202-61-2 61241-05-2 61241-06-3 RL: MOA (Modifier or additive use); USES (Uses) (heat stabilizers contg., for PVC)				
IT	9002-86-2 RL: USES (Uses) (heat stabilizers for, butyltin ethylhexyl mercaptopropionates as)				
IT	50448-95-8 RL: RCT (Reactant) (reaction of, with butyltin oxide hydroxide)				
IT	683-18-1 1118-46-3 1461-22-9 RL: RCT (Reactant) (reaction of, with sodium hydroxide)				
IT	1310-73-2, reactions RL: RCT (Reactant) (with butyltin chlorides)				
IT	53202-61-2 61241-05-2 61241-06-3 RL: MOA (Modifier or additive use); USES (Uses)				

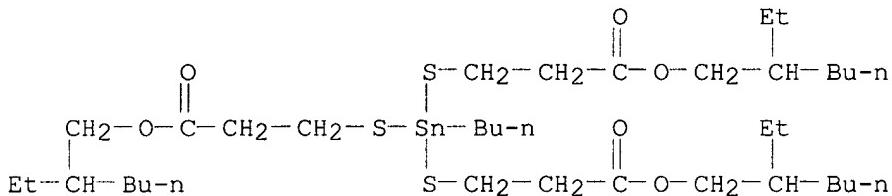
(heat stabilizers contg., for PVC)

RN 53202-61-2 HCPLUS

CN 10-Oxa-4,6-dithia-5-stannahexadecanoic acid, 5,5-dibutyl-12-ethyl-9-oxo-,
2-ethylhexyl ester (9CI) (CA INDEX NAME)

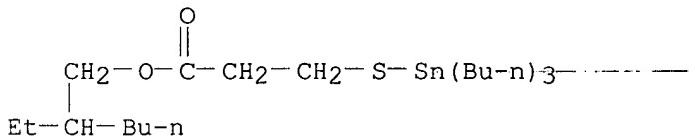
RN 61241-05-2 HCPLUS

CN 10-Oxa-4,6-dithia-5-stannahexadecanoic acid, 5-butyl-12-ethyl-5-[[3-[(2-ethylhexyl)oxy]-3-oxopropyl]thio]-9-oxo-, 2-ethylhexyl ester (9CI) (CA INDEX NAME)



RN 61241-06-3 HCPLUS

CN Propanoic acid, 3-[(tributylstannyl)thio]-, 2-ethylhexyl ester (9CI) (CA INDEX NAME)



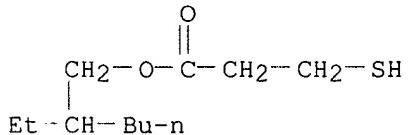
IT 50448-95-8

RL: RCT (Reactant)

(reaction of, with butyltin oxide hydroxide)

RN 50448-95-8 HCPLUS

CN Propanoic acid, 3-mercpto-, 2-ethylhexyl ester (9CI) (CA INDEX NAME)



L55 ANSWER 15 OF 38 HCPLUS COPYRIGHT 2002 ACS

AN 1976:593578 HCPLUS

DN 85:193578

TI Organotin compounds
 IN Collins, John Desmond; Coates, Harold; Siddiqui, Iftikhar H.
 PA Albright and Wilson Ltd., UK
 SO Brit., 18 pp.
 CODEN: BRXXAA

DT Patent
 LA English
 IC C07F007-22
 CC 36-6 (Plastics Manufacture and Processing)
 Section cross-reference(s): 29

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	GB 1439751	A	19760616	GB 1972-21826	19730510
	CA 1020569	A1	19771108	CA 1973-170798	19730509
	US 3962295	A	19760608	US 1974-533535	19741217 <--
PRAI	GB 1972-21826		19720510		
	US 1973-359176		19730510		
AB	Improved stabilization of PVC [9002-86-2] against thermal degrdn. was obtained using the low-Sn content 1,6-bis[(dialkylstannylyl)thio]hexane deriv. stabilizers. E.g., Corvic D55-9 was blended with 1.6 parts stabilizer/100 parts resin, the stabilizer comprising Bu epoxystearate 15, BuSn(SCH ₂ CO ₂ C ₈ H ₁₇) ₃ 5, Plastilube 30 0.5%, and 95% Bu ₂ SnRS(CH ₂) ₆ SSnRBu ₂ [R = O ₂ C(CH ₂) ₂ SCH ₂ (CH ₂) ₁₀ Me]SCH ₂ CO ₂ (CH ₂) ₅ CHMe ₂] [58828-55-0], prep'd. in 2 stages from dodecylaldehyde [112-54-9], HS(CH ₂) ₂ CO ₂ H [107-96-0], and iso-octyl thioglycollate [25103-09-7] using Bu ₂ SnO [818-08-6] and HS(CH ₂) ₆ SH [1191-43-1]. The rigid compn. had Gardner Scale color 2-3 after 15 min at 190.degree. compared with a color 5 for a conventional PVC compn. (Mellite 31C) contg. an equiv. amt. of stabilizer. An equiv. amt. of stabilizer. Six other stabilizers were prep'd.				
ST	PVC heat stabilizer organothiotin; sulfur tin stabilizer PVC; stannylthiohexane stabilizer PVC				
IT	Heat stabilizers (bis[(dialkylstannylyl)thio]hexane derivs., for PVC)				
IT	Discoloration prevention (of PVC, by bis[(dialkylstannylyl)thio]hexane derivs.)				
IT	107-96-0 RL: RCT (Reactant) (condensation reaction of, with aldehydes and alkyl thioglycolates)				
IT	818-08-6 870-08-6 RL: RCT (Reactant) (condensation reaction of, with alkylmercaptopropionic acids)				
IT	1191-43-1 RL: RCT (Reactant) (condensation reaction of, with dialkytin esters)				
IT	25103-09-7 RL: RCT (Reactant) (condensation reaction of, with dodecylaldehyde and mercaptopropionic acid)				
IT	112-54-9 RL: RCT (Reactant) (condensation reaction of, with isoocetyl thioglycollate and mercaptopropionic acid)				
IT	90-02-8, reactions RL: RCT (Reactant) (condensation reaction of, with mercaptopropionic acid and ethylhexyl thioglycolate)				
IT	7659-86-1 RL: RCT (Reactant)				

Not reverse

(condensation reaction of, with mercaptopropionic acid and salicylaldehyde)

IT 77-85-0
 RL: RCT (Reactant)
 (esterification by, of isoctyl maleate and mercaptopropionic acid)

IT 26952-21-6
 RL: RCT (Reactant)
 (esterification by, of maleic anhydride)

IT 30137-97-4
 RL: RCT (Reactant)
 (esterification of, by dibutyltin oxide)

IT 108-31-6, reactions
 RL: RCT (Reactant)
 (esterification of, by isoctyl alc.)

IT 115-77-5, reactions
 RL: RCT (Reactant)
 (esterification of, with lauric and mercaptopropionic acids)

IT 143-07-7, reactions
 RL: RCT (Reactant)
 (esterification of, with pentaerythritol)

IT 50828-62-1P 60999-12-4P 60999-13-5P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
 (prepn. and reaction with dibutyltin oxide)

IT 60998-26-7P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
 (prepn. and reaction with dioctyltin oxide)

IT 58824-62-7P 58824-64-9P 58832-17-0P
 RL: PREP (Preparation)
 (prepn. of)

IT 112-55-0
 RL: RCT (Reactant)
 (reaction of, with dibutyltin oxide and alkylmercaptopropionic acid)

IT 50828-68-7
 RL: RCT (Reactant)
 (reaction of, with monoctyl butenedioic acid and dibutyltin oxide)

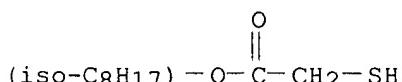
IT 9002-86-2
 RL: USES (Uses)
 (stabilizers for, bis[(dialkylstannylyl)thio]hexane derivs. as)

IT 58824-65-0 58828-55-0 60999-11-3
 RL: MOA (Modifier or additive-use); USES (Uses)
 (stabilizers, for PVC)

IT 25103-09-7
 RL: RCT (Reactant)
 (condensation reaction of, with dodecylaldehyde and mercaptopropionic acid)

RN 25103-09-7 HCPLUS

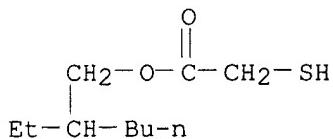
CN Acetic acid, mercapto-, isoctyl ester (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



IT 7659-86-1
 RL: RCT (Reactant)
 (condensation reaction of, with mercaptopropionic acid and salicylaldehyde)

RN 7659-86-1 HCPLUS

CN Acetic acid, mercapto-, 2-ethylhexyl ester (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

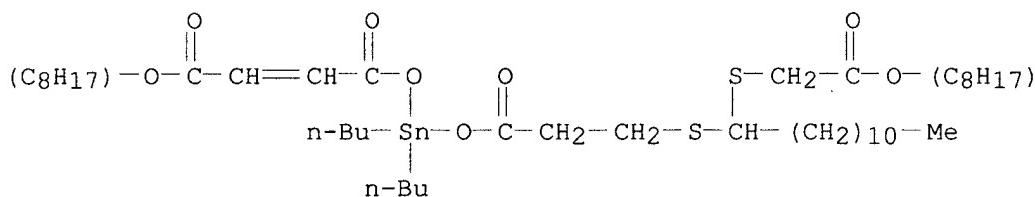


IT 50828-62-1P 60999-12-4P 60999-13-5P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(prep. and reaction with dibutyltin oxide)

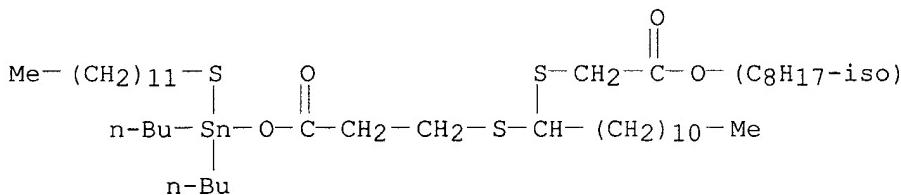
RN 50828-62-1 HCPLUS

CN 9,11-Dioxa-3,5-dithia-10-stannapentadec-13-enedioic acid,
10,10-dibutyl-8,12-dioxo-4-undecyl-, diisooctyl ester, (Z)- (9CI) (CA INDEX NAME)



RN 60999-12-4 HCPLUS

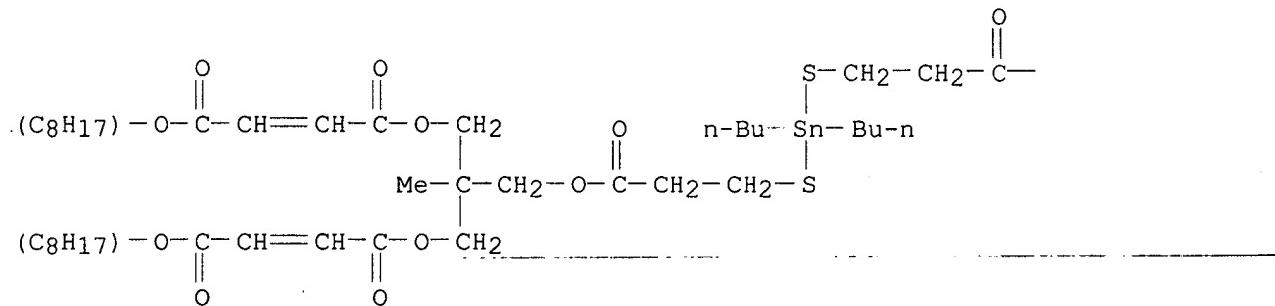
CN 9-Oxa-3,5,11-trithia-10-stannatricosanoic acid, 10,10-dibutyl-8-oxo-4-undecyl-, isooctyl ester (9CI) (CA INDEX NAME)



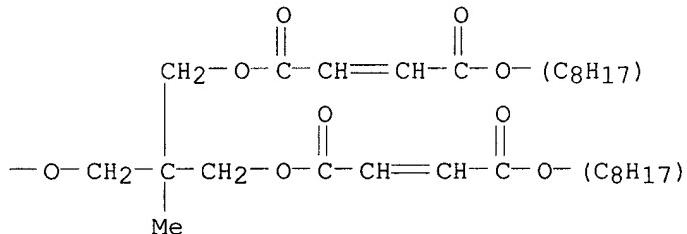
RN 60999-13-5 HCPLUS

CN 5,9,19,23-Tetraoxa-13,15-dithia-14-stannaheptacosa-2,25-dienedioic acid, 14,14-dibutyl-7,21-bis[[[4-(isooctyloxy)-1,4-dioxo-2-but enyl]oxy]methyl]-7,21-dimethyl-4,10,18,24-tetraoxo-, diisooctyl ester, (all-Z)- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



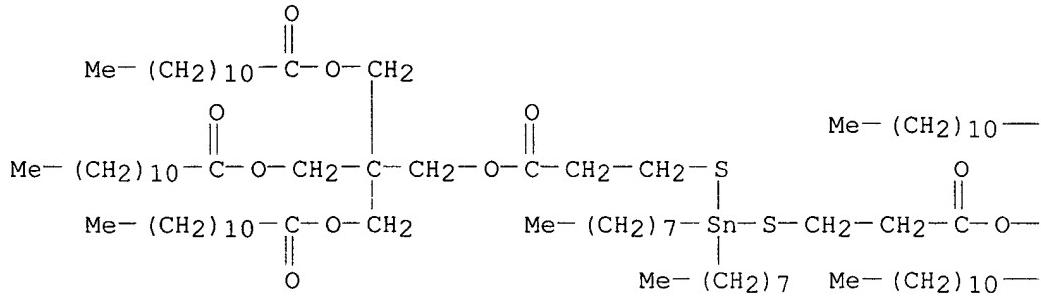
IT 60998-26-7P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and reaction with dioctyltin oxide)

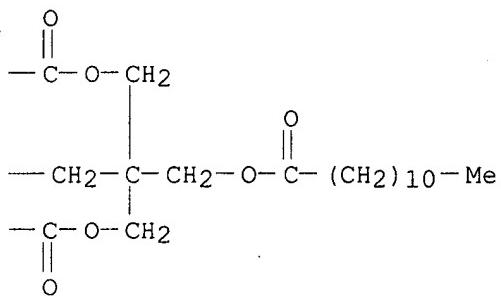
RN 60998-26-7 HCAPLUS

CN- 10,14-Dioxa-4,6-dithia-5-stannahexacosanoic acid, 5,5-dioctyl-9,15-dioxo-12,12-bis[[[(1-oxododecyl)oxy]methyl]-, 3-[(1-oxododecyl)oxy]-2,2-bis[[[(1-oxododecyl)oxy]methyl]propyl ester (9CI) (CA INDEX NAME)

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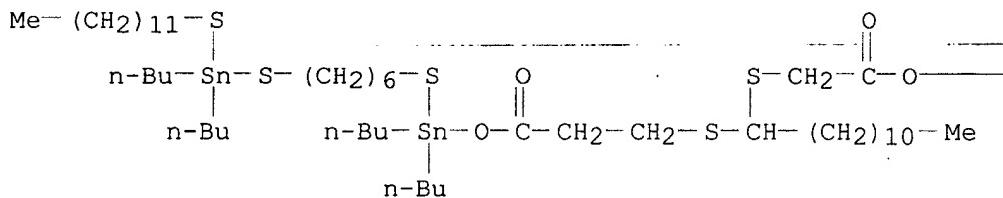
IT 58824-62-7P 58824-64-9P 58832-17-0P

RL: PREP (Preparation)
(prepn. of)

RN 58824-62-7 HCPLUS

CN 9-Oxa-3,5,11,18,20-pentathia-10,19-distannadotriacontanoic acid,
10,11,19,19-tetrabutyl-8-oxo-4-undecyl-, octyl ester (9CI) (CA INDEX
NAME)

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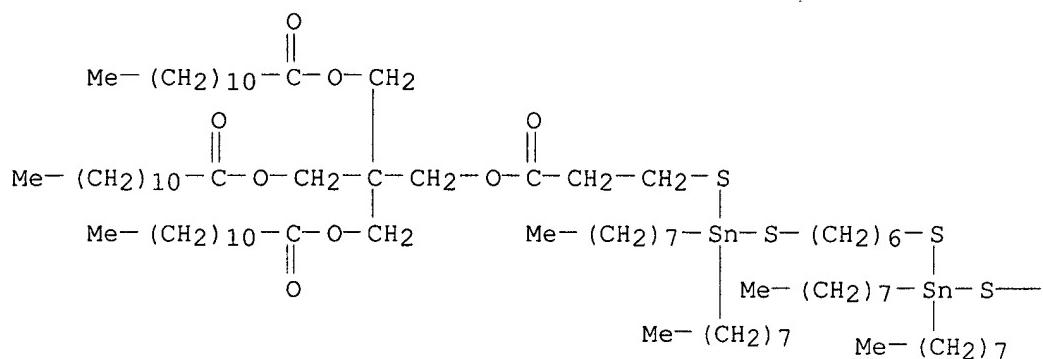
PAGE 1-B

— (CH₂)₇—Me

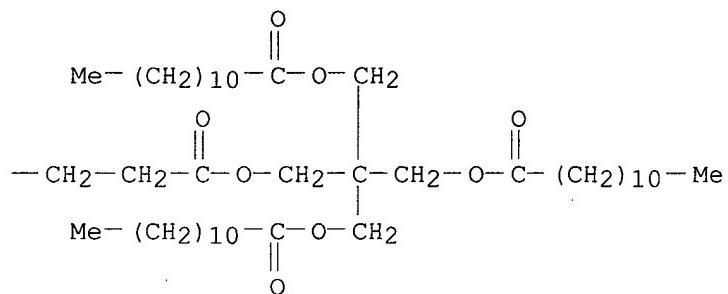
RN 58824-64-9 HCPLUS

CN 4,6,13,15-Tetrathia-5,14-distannaoctadecanedioic acid,
5,5,14,14-tetraoctyl-, bis[3-[(1-oxododecyl)oxy]-2,2-bis[[(1-
oxododecyl)oxy]methyl]propyl] ester (9CI) (CA INDEX NAME)

PAGE 1-A

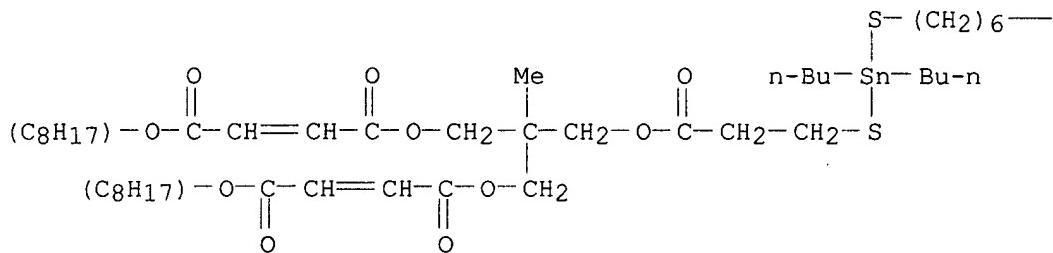


PAGE 1-B

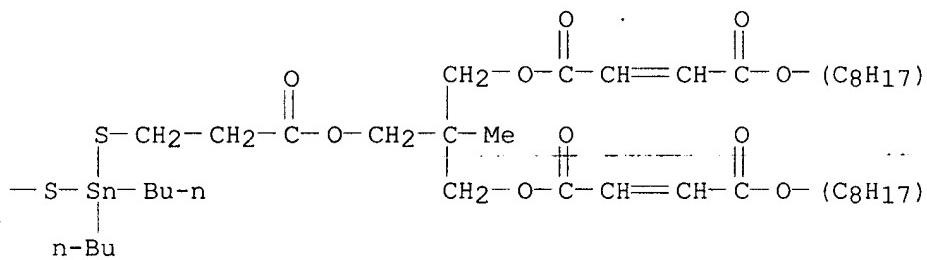


RN 58832-17-0 HCPLUS
CN 5,9,28,32-Tetraoxa-13,15,22,24-tetrathia-14,23-distannahexatriaconta-2,34-diene dioic acid, 14,14,23,23-tetrabutyl-7,30-bis[[4-(isoctyloxy)-1,4-dioxo-2-butenyl]oxy]methyl]-7,30-dimethyl-4,10,27,33-tetraoxo-, diisooctyl ester, (all-Z)- (9CI) (CA INDEX NAME)

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PAGE 1-B



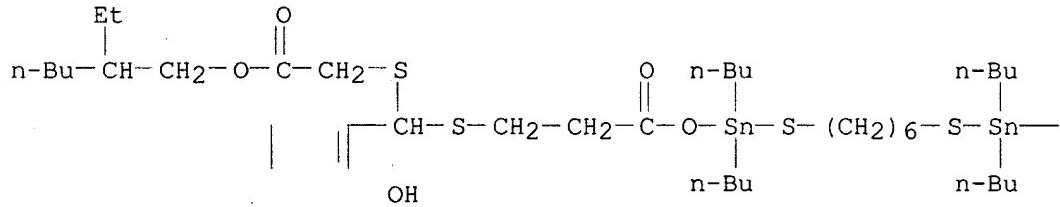
IT 58824-65-0 58828-55-0 60999-11-3

RL: MOA (Modifier or additive use); USES (Uses)
(stabilizers, for PVC)

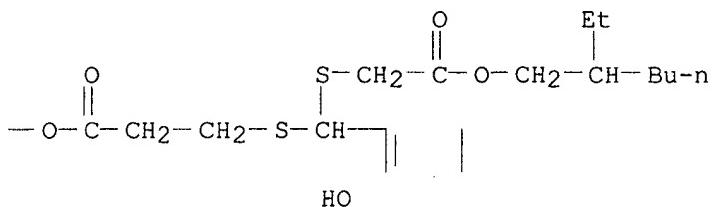
RN 58824-65-0 HCAPLUS

CN 9,20-Dioxa-3,5,11,18,24,26-hexathia-10,19-distannaoctacosanedioic acid,
10,10,19,19-tetrabutyl-4,25-bis(2-hydroxyphenyl)-8,21-dioxo-,
bis(2-ethylhexyl) ester (9CI) (CA INDEX NAME)

PAGE 1-A



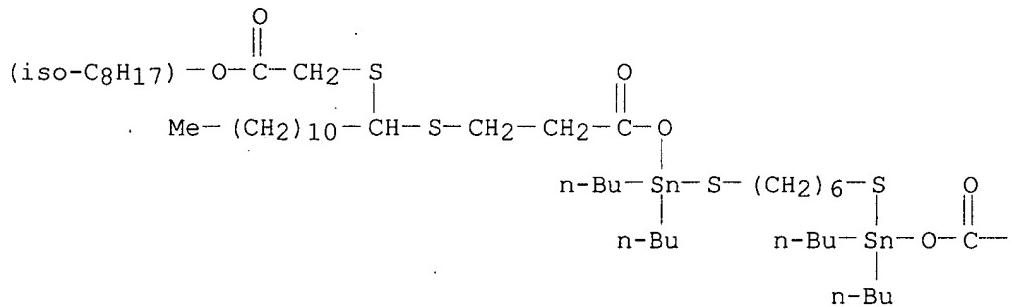
PAGE 1-B



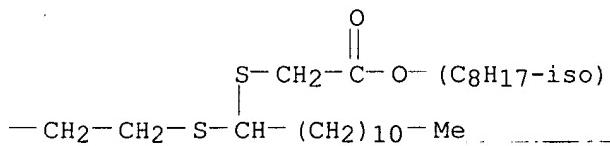
RN 58828-55-0 HCPLUS

CN 9,20-Dioxa-3,5,11,18,24,26-hexathia-10,19-distannaoctacosanedioic acid,
10,11,19,19-tetrabutyl-8,21-dioxo-4,25-diundecyl-, diisoctyl ester (9CI)
(CA INDEX NAME)

PAGE 1-A



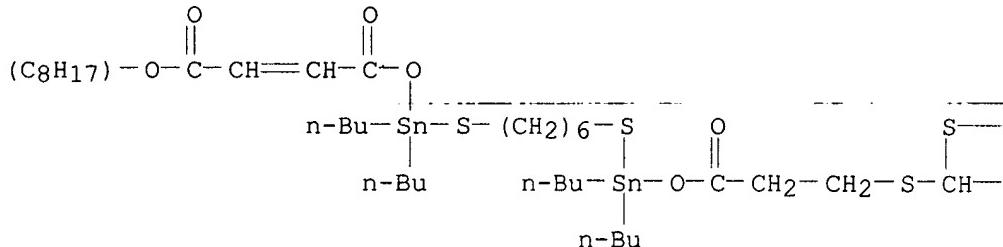
PAGE 1-B



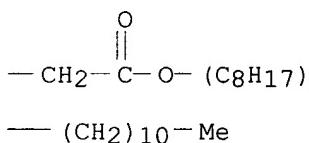
RN 60999-11-3 HCPLUS

CN 5,16-Dioxa-7,14,20,22-tetrathia-6,15-distannatetracos-2-enedioic acid,
6,6,15,15-tetrabutyl-4,17-dioxo-21-undecyl-, diisoctyl ester, (Z)- (9CI)
(CA INDEX NAME)

PAGE 1-A



PAGE 1-B



L55 ANSWER 16 OF 38 HCPLUS COPYRIGHT 2002 ACS
AN 1976:422370 HCPLUS
DN 85:22370
TI Foamable plastic mixture
IN Mueller, Horst; Sander, Hans J.; Buessing, Juergen
PA Ciba-Geigy Marienberg G.m.b.H., Ger.
SO Ger. Offen., 19 pp.
CODEN: GWXXBX
DT Patent
LA German
IC C08K; C08J
CC 36-6 (Plastics Manufacture and Processing)

PATENT NO.		KIND	DATE	APPLICATION NO.	DATE
PI	DE 2444991	A1	19760401	DE 1974-2444991	19740920
	DE 2444991	C2	19831201		
	CH 623341	A	19810529	CH 1975-12010	19750916
	BE 833608	A1	19760319	BE 1975-160193	19750919
	DK 7504214	A	19760321	DK 1975-4214	19750919
	SE 7510520	A	19760322	SE 1975-10520	19750919
	SE 421133	B	19811130		
	SE 421133	C	19820311		
	NO 7503202	A	19760323	NO 1975-3202	19750919
	NO 144458	B	19810525		
	NO 144458	C	19810902		
	NL 7511111	A	19760323	NL 1975-11111	19750919
	FR 2285424	A1	19760416	FR 1975-28743	19750919
	FR 2285424	B1	19790309		
	ES 441127	A1	19770316	ES 1975-441127	19750919
	AT 347693	B	19790110	AT 1975-7195	19750919
	ZA 7505997	A	19761027	ZA 1975-5997	19750922
	AU 7585060	A1	19770331	AU 1975-85060	19750922
PRAI	DE 1974-2444991		19740920		

AB Organotin oxides and/or alcoholates such as dibutyltin oxide (I) [818-08-6], dibutyltin bis(isooctyl .beta.-mercaptopropionate) (II) [26761-46-6], and dibutyltin dimethoxide [1067-55-6] were used as activators for azodicarbonamide (III) [123-77-3] blowing agent in PVC [9002-86-2] compns. to prep. foams at 165-200.degree.. Thus, a mixt. of PVC 100, dioctyl phthalate 50, epoxidized soybean oil 3, TiO₂ 3, III 2, and a soln. of 2 moles I and 1 mole II 1 g was heated at 180.degree. to prep. foam with d. 0.71.

ST azodicarbonamide blowing agent activator; PVC foaming

azodicarbonamide activator; tin compd activator azodicarbonamide

IT 818-08-6 870-08-6 1067-55-6 2273-45-2 15546-11-9 15895-46-2
25155-22-0 26738-80-7 **26761-46-6** 34833-30-2 51590-67-1
53202-61-2 59571-07-2 59571-08-3 59571-09-4 59597-55-6

RL: CAT (Catalyst use); USES (Uses)
(activators, for azodicarbonamide blowing agent)

IT 123-77-3
RL: USES (Uses)
(blowing agents, activators for, organotin compds. as)

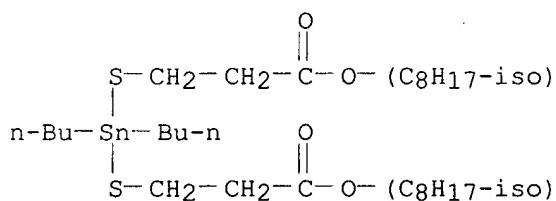
IT 9002-86-2P
RL: PEP (Physical, engineering or chemical process); PREP (Preparation);
PROC (Process)
(cellular, manuf. of, activators for diazodicarbonamide in)

IT 30374-01-7
RL: USES (Uses)
(tin compds. contg., activators, for azodicarbonamide blowing agent)

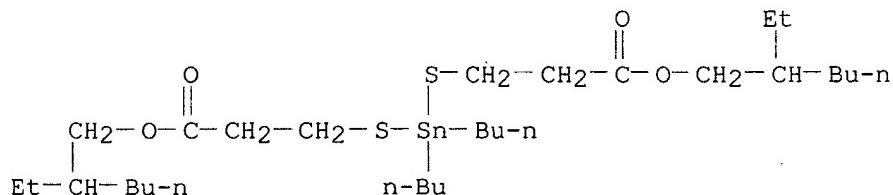
IT **26761-46-6 53202-61-2**
RL: CAT (Catalyst use); USES (Uses)
(activators, for azodicarbonamide blowing agent)

RN 26761-46-6 HCAPLUS

CN Propanoic acid, 3,3'-(dibutylstannylene)bis(thio)]bis-, diisooctyl ester (9CI) (CA INDEX NAME)

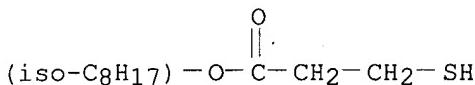


RN 53202-61-2 HCAPLUS
CN 10-Oxa-4,6-dithia-5-stannahexadecanoic acid, 5,5-dibutyl-12-ethyl-9-oxo-,
2-ethylhexyl ester (9CI) (CA INDEX NAME)



IT 30374-01-7
RL: USES (Uses)
(tin compds. contg., activators, for azodicarbonamide blowing agent)
RN 30374-01-7 HCPLUS

CN Propanoic acid, 3-mercaptop-, isoctyl ester (9CI) (CA INDEX NAME)



L55 ANSWER 17 OF 38 HCAPLUS COPYRIGHT 2002 ACS

AN 1976:165656 HCAPLUS

DN 84:165656

TI Organotin compounds stabilizers for vinyl halide polymers

IN Collins, John D.; Coates, Harold; Siddiqui, Iftikhar H.

PA Albright and Wilson Ltd., UK

SO U.S., 14 pp.

CODEN: USXXAM

DT Patent

LA English

IC C08J

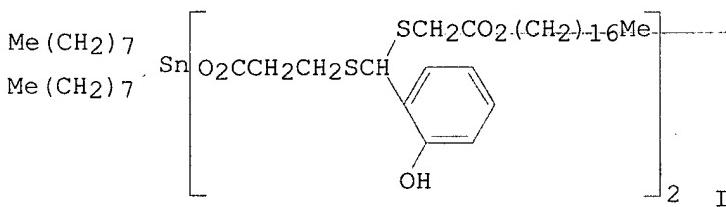
NCL 260045750

CC 36-6 (Plastics Manufacture and Processing)

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 3928284	A	19751223	US 1974-463452	19740424 <--
	US 4020090	A	19770426	US 1974-525119	19741119 <--
PRAI	US 1972-308018		19721120		
	GB 1971-53892		19711119		

GI

Not review

- AB A series of 25 Sn- and S-contg. org. stabilizers was synthesized; 18 stabilizers were evaluated by adding them to rigid PVC [9002-86-2] (com. Corvic D55/9) compns., heating, and detg. Gardner colour no. (C). The best was stabilizer I [50828-75-6]; a sample contg. PVC 100, Plastilube 30 0.5-1.0, and I 2 parts had C = 2 after 20 min at 190.degree. compared with C = 5 for a sample contg. 2 parts dibutyltin bis(isooctylthioglycolate). I was prep'd. by refluxing salicylaldehyde 0.25, isoctyl thioglycolate 0.25, HSCH₂CH₂CO₂H 0.25, and dioctyltin oxide 0.125 moles in 300 ml benzene contg. 0.1 g ZnCl₂ and isolated by distn.
- ST PVC stabilizer alkyltin mercaptoester; organotin stabilizer rigid PVC; heat stabilizer PVC tin
- IT Heat stabilizers
(alkyltin mercaptoesters, for rigid PVC)
- IT 9002-86-2
- RL: USES (Uses)
(heat stabilizers for rigid, alkyltin mercaptoesters as)
- IT 41376-60-7 50674-07-2 50674-08-3

50674-09-4 50674-11-8 50674-12-9
50674-13-0 50828-62-1 50828-63-2
50828-64-3 50828-65-4 50828-66-5
50828-67-6 50828-70-1 50828-71-2
50828-72-3 50828-73-4 50828-74-5
50828-75-6 50928-96-6 58993-98-9
58993-99-0 59007-32-8 59007-33-9
RL: MOA (Modifier or additive use); USES (Uses)
(heat stabilizers, for rigid PVC)

IT 36653-82-4
RL: RCT (Reactant)
(reaction of, with S,S-(cyclohexylene)bis(mercaptoacetic acid) and dioctyltin oxide)

IT 50828-69-8
RL: RCT (Reactant)
(reaction of, with S-[1-(isoctyloxycarbonylmethylthio)-dodecyl]-.beta.-mercaptopropionic acid and dioctyltin oxide)

IT 20292-00-6 50674-15-2 50828-68-7
RL: RCT (Reactant)
(reaction of, with S-[.alpha.-(isoctyloxycarbonylmethylthio)-o-hydroxybenzyl]-.beta.-mercaptopropionic acid and dioctyltin oxide)

IT 818-08-6 870-08-6
RL: RCT (Reactant)
(reaction of, with aldehyde-mercaptoacid-mercaptoester mixts., in manuf. of alkyltin mercaptoester stabilizers)

IT 107-96-0
RL: RCT (Reactant)
(reaction of, with aldehyde-mercaptoester-dialkyltin oxide mixts. in manuf. of alkyltin mercaptoester stabilizers)

IT 50674-17-4 58993-97-8
RL: RCT (Reactant)
(reaction of, with alkyltin oxides and .beta.-mercaptopropionic acid)

IT 4265-54-7
RL: RCT (Reactant)
(reaction of, with cetyl alc. and dioctyltin oxide)

IT 31335-29-2
RL: RCT (Reactant)
(reaction of, with dioctyltin oxide)

IT 123-11-5
RL: RCT (Reactant)
(reaction of, with isoctyl thioglycolate and mercaptopropionic acid)

IT 97-96-1
RL: RCT (Reactant)
(reaction of, with isoctyl thioglycolate and .beta.-mercaptopropionic acid)

IT 3746-40-5
RL: RCT (Reactant)
(reaction of, with maleic anhydride)

IT 112-55-0 3746-39-2 25103-09-7 30374-01-7
RL: RCT (Reactant)
(reaction of, with mercaptoacid-aldehyde-dialkyltin mixts. in manuf. of alkyltin mercaptoester stabilizers)

IT 112-54-9
RL: RCT (Reactant)
(reaction of, with mercaptoacid-mercaptoester-dialkyltin oxide mixts. in manuf. of alkyltin mercaptoester stabilizers)

IT 30137-97-4
RL: RCT (Reactant)
(reaction of, with mercaptopropionic acid derivs.)

IT 141-97-9

RL: RCT (Reactant)
 (reaction of, with .beta.-mercaptopropionic acid and lauryl thioglycolate and dibutyltin oxide)

IT 50828-61-0
 RL: RCT (Reactant)
 (reactions of, with isooctyl maleate and dialkyltin oxides)

IT 50828-60-9
 RL: RCT (Reactant)
 (reactions of, with isooctyl maleate and dioctyltin oxide)

IT 50674-14-1
 RL: RCT (Reactant)
 (reactions of, with mercaptoesters and dioctyltin oxide)

IT 90-02-8, reactions
 RL: RCT (Reactant)
 (with mercaptoacid-mercaptoester-dialkyltin oxide mixts., in manuf. of alkyltin mercaptoester stabilizers)

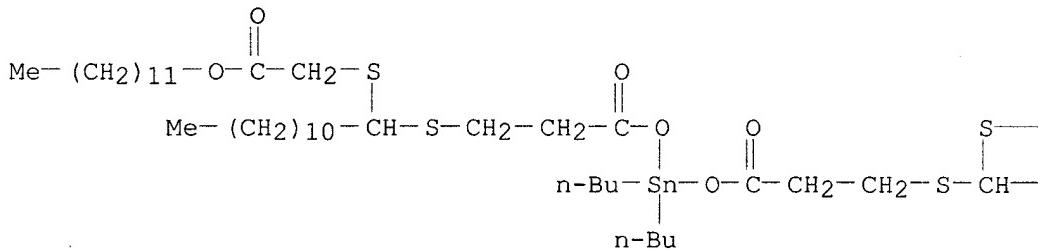
IT 108-31-6, reactions
 RL: RCT (Reactant)
 (with nonyl thioglycolate)

IT 41376-60-7 50674-07-2 50674-08-3
 50674-09-4 50674-11-8 50674-12-9
 50674-13-0 50828-62-1 50828-63-2
 50828-64-3 50828-65-4 50828-66-5
 50828-67-6 50828-70-1 50828-71-2
 50828-72-3 50828-73-4 50828-74-5
 50828-75-6 50928-96-6 58993-98-9
 58993-99-0 59007-32-8 59007-33-9
 RL: MOA (Modifier or additive use); USES (Uses)
 (heat stabilizers, for rigid PVC)

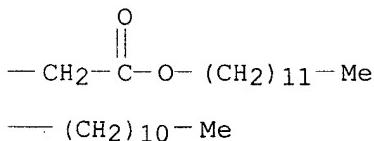
RN 41376-60-7 HCAPLUS

CN 13,22,24,33-Tetraoxa-16,18,28,30-tetrathia-23-stannapentatetracontane,
 23,23-dibutyl-14,21,25,32-tetraoxo-17,2a-diundecyl- (9CI) (CA INDEX NAME)

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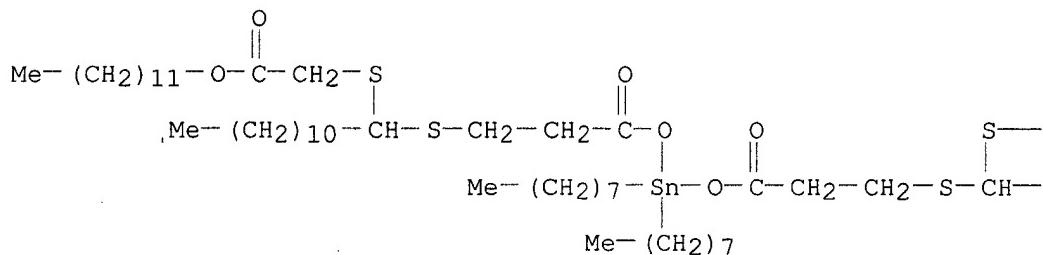
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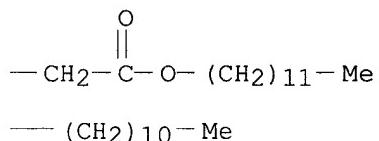
RN 50674-07-2 HCAPLUS
 CN 9,11-Dioxa-3,5,15,17-tetrathia-10-stannanonadecanedioic acid,

10,10-dioctyl-8,12-dioxo-4,16-diundecyl-, didodecyl ester (9CI) (CA INDEX NAME)

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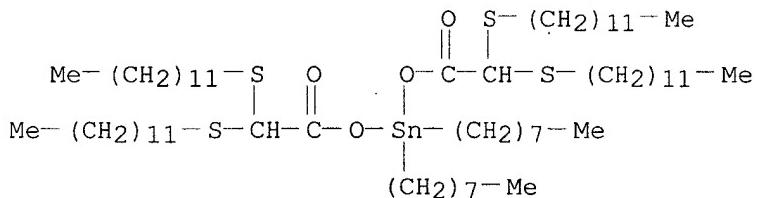


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RN 50674-08-3 HCAPLUS

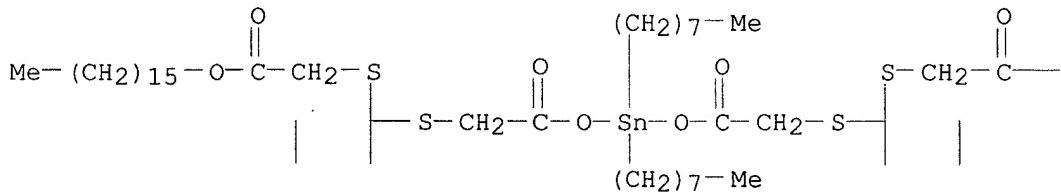
CN 15,17-Dioxa-12,20-dithia-16-stannadotriacontane, 13,19-bis(dodecylthio)-16,16-dioctyl-14,18-dioxo- (9CI) (CA INDEX NAME)



RN 50674-09-4 HCAPLUS

CN Acetic acid, 2,2'-(dioctylstannylene)bis[oxy(2-oxo-2,1-ethanediyl)thiocyclohexylidenethio]bis-, dihexadecyl ester (9CI) (CA INDEX NAME)

PAGE 1-A



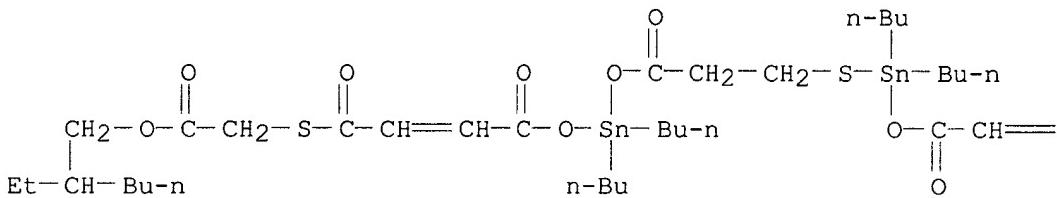
PAGE 1-B

 $\text{--- O---(CH}_2\text{)}_{15}\text{---Me}$

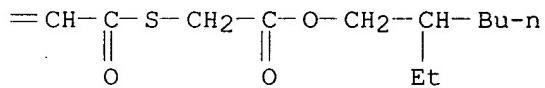
RN 50674-11-8 HCPLUS

CN 8,10,16-Trioxa-3,14,21-trithia-9,15-distannatricosa-5,18-dienedioic acid,
9,9,15,15-tetrabutyl-4,7,11,17,20-pentaoxo-, bis(2-ethylhexyl) ester (9CI)
(CA INDEX NAME)

PAGE 1-A



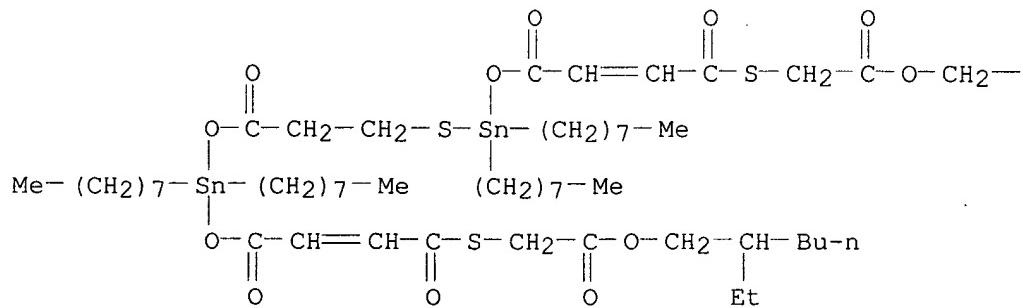
PAGE 1-B



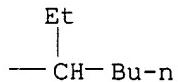
RN 50674-12-9 HCPLUS

CN 8,10,16-Trioxa-3,14,21-trithia-9,15-distannatricosa-5,18-dienedioic acid,
9,9,15,15-tetraoctyl-4,7,11,17,20-pentaoxo-, bis(2-ethylhexyl) ester (9CI)
(CA INDEX NAME)

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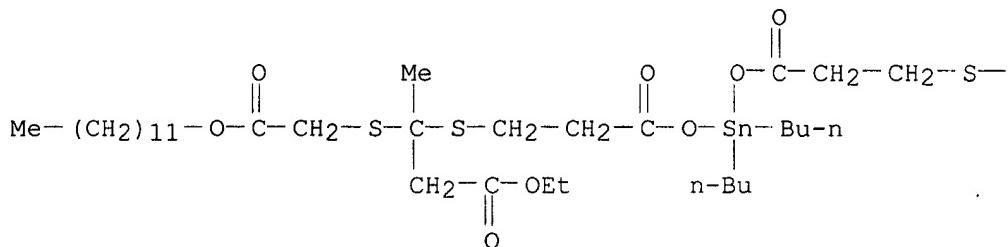
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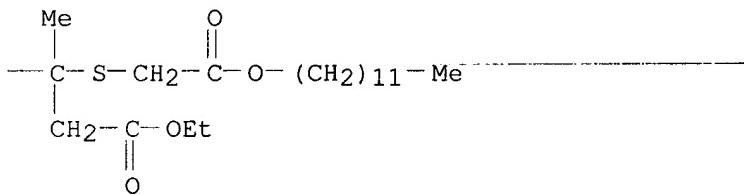
RN 50674-13-0 HCAPLUS

CN 9,11-Dioxa-3,5,15,17-tetrathia-10-stannanonadecanedioic acid,
 10,10-dibutyl-4,16-bis(2-ethoxy-2-oxoethyl)-4,16-dimethyl-8,12-dioxo-,
 didodecyl ester (9CI) (CA INDEX NAME)

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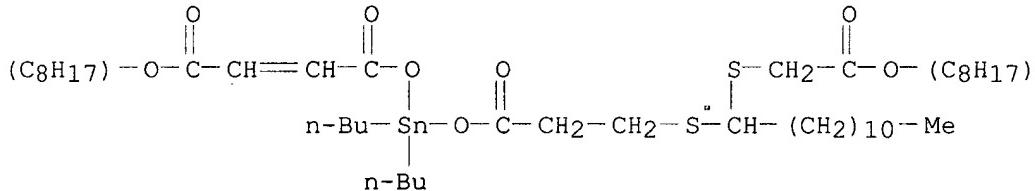


PAGE 1-B



RN 50828-62-1 HCAPLUS

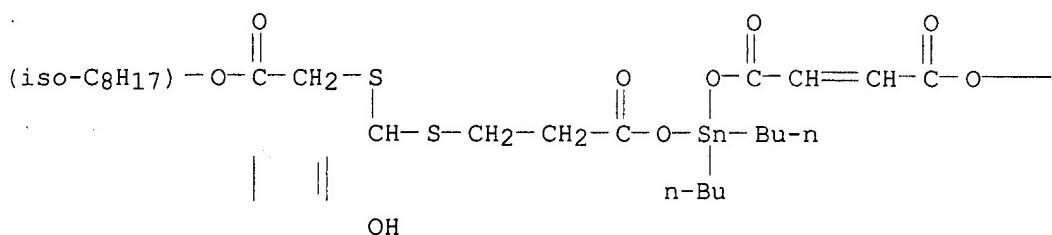
CN 9,11-Dioxa-3,5-dithia-10-stannapentadec-13-enedioic acid,
 10,10-dibutyl-8,12-dioxo-4-undecyl-, diisoctyl ester, (Z)- (9CI) (CA
 INDEX NAME)



RN 50828-63-2 HCAPLUS

CN 9,11-Dioxa-3,5-dithia-10-stannapentadec-13-enedioic acid,
 10,10-dibutyl-4-(2-hydroxyphenyl)-8,12-dioxo-, diisoctyl ester, (Z)-
 (9CI) (CA INDEX NAME)

PAGE 1-A

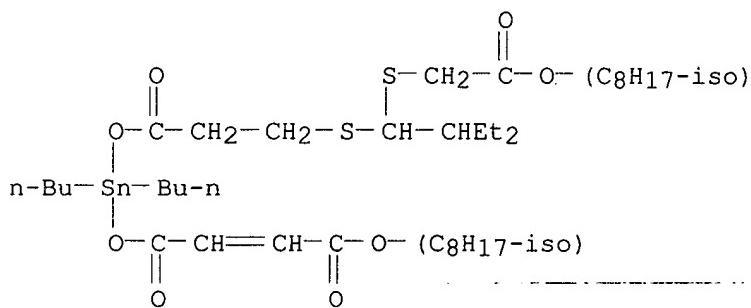


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— (C₈H₁₇-iso)

RN 50828-64-3 HCAPLUS

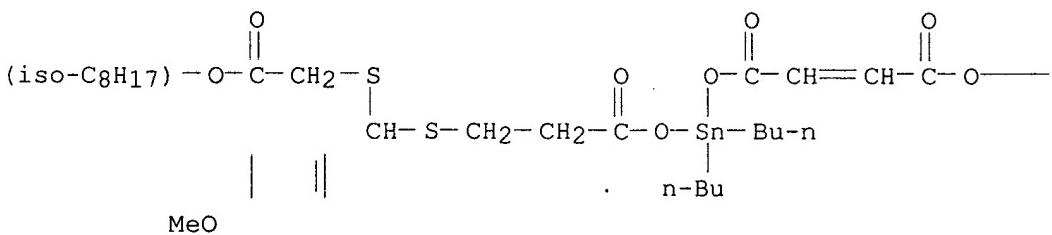
CN 9,11-Dioxa-3,5-dithia-10-stannapentadec-13-enedioic acid,
10,10-dibutyl-4-(1-ethylpropyl)-8,12-dioxo-, diisooctyl ester, (Z)- (9CI)
(CA INDEX NAME)



RN 50828-65-4 HCAPLUS

CN 9,11-Dioxa-3,5-dithia-10-stannapentadec-13-enedioic acid,
10,10-dibutyl-4-(4-methoxyphenyl)-8,12-dioxo-, diisoctyl ester, (Z)-
(9CI) (CA INDEX NAME)

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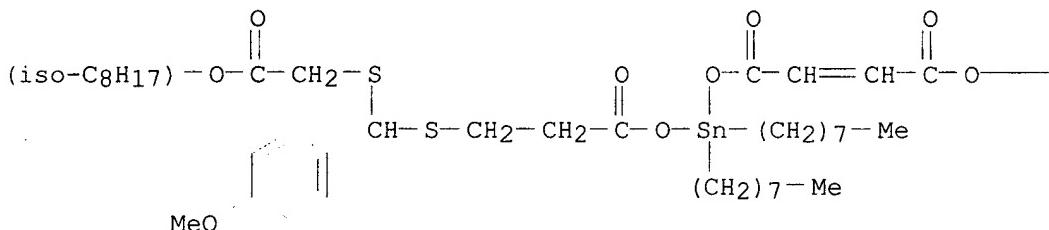


PAGE 1-B

— (C₈H₁₇-iso)

RN 50828-66-5 HCAPLUS
 CN 9,11-Dioxa-3,5-dithia-10-stannapentadec-13-enedioic acid,
 4-(4-methoxyphenyl)-10,10-diethyl-8,12-dioxo-, diisooctyl ester, (Z)-
 (9CI) (CA INDEX NAME)

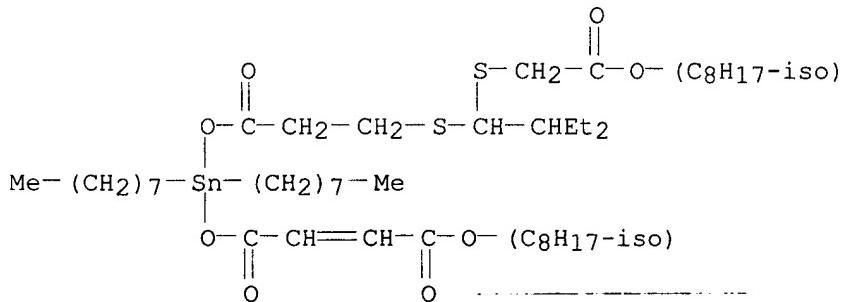
PAGE 1-A



PAGE 1-B

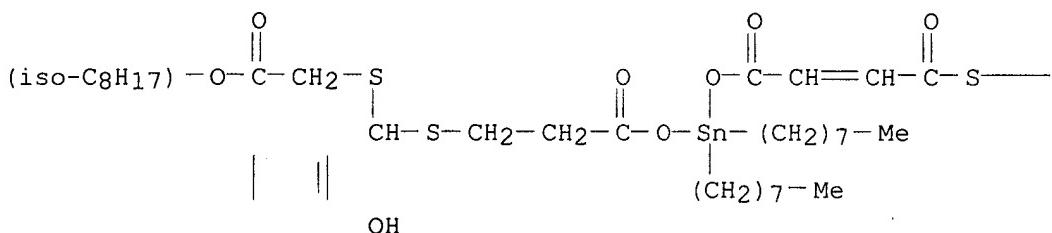
— (C₈H₁₇-iso)

RN 50828-67-6 HCAPLUS
 CN 9,11-Dioxa-3,5-dithia-10-stannapentadec-13-enedioic acid,
 4-(1-ethylpropyl)-10,10-diethyl-8,12-dioxo-, diisooctyl ester, (Z)- (9CI)
 (CA INDEX NAME)

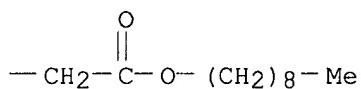


RN 50828-70-1 HCAPLUS
 CN 9,11-Dioxa-3,5,16-trithia-10-stannaoctadec-13-enedioic acid,
 4-(2-hydroxyphenyl)-10,10-diethyl-8,12,15-trioxo-, 1-isooctyl 18-nonyl
 ester, (Z)- (9CI) (CA INDEX NAME)

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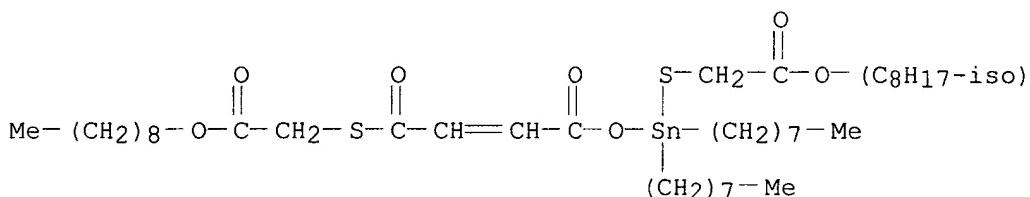


PAGE 1-B



RN 50828-71-2 HCAPLUS

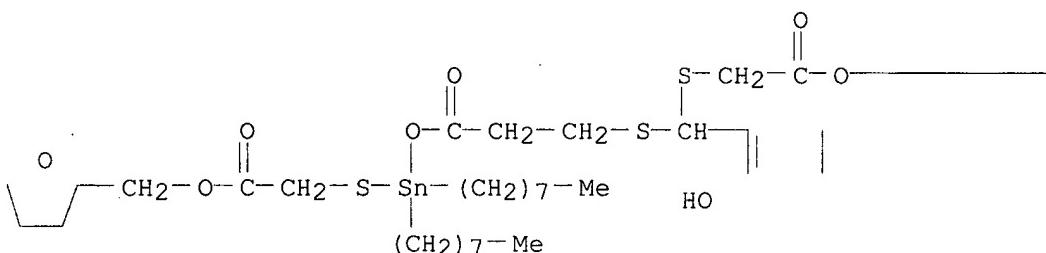
CN 5-Oxa-3,10-dithia-4-stannadodec-7-enedioic acid, 4,4-dioctyl-6,9-dioxo-, 1-isoctyl 12-nonyl ester, (Z)- (9CI) (CA INDEX NAME)



RN 50828-72-3 HCAPLUS

CN 5-Oxa-3,9,11-trithia-4-stannatridecanedioic acid, 10-(2-hydroxyphenyl)-4,4-dioctyl-6-oxo-, 13-isoctyl 1-[(tetrahydro-2-furanyl)methyl] ester (9CI) (CA INDEX NAME)

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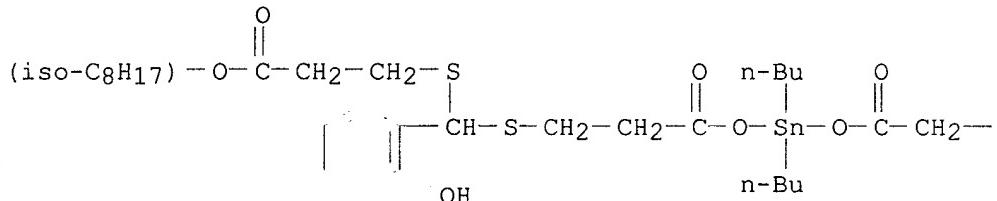


PAGE 1-B

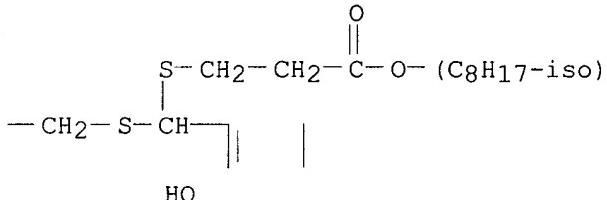
— (C₈H₁₇-iso)

RN 50828-73-4 HCAPLUS
CN 10,12-Dioxa-4,6,16,18-tetrathia-11-stannaheneicosanedioic acid,
11,11-dibutyl-15,17-bis(2-hydroxyphenyl)-9,13-dioxo-, diisooctyl ester
(9CI) (CA INDEX NAME)

PAGE 1-A

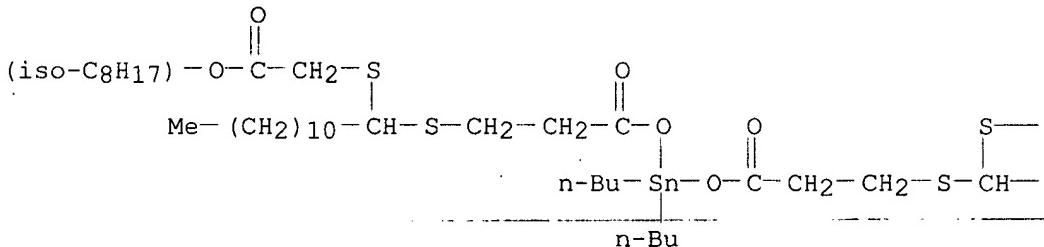


PAGE -1-B-

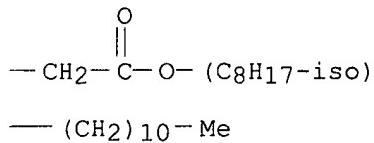


RN 50828-74-5 HCAPLUS
CN 9,11-Dioxa-3,5,15,17-tetrathia-10-stannanonadecanedioic acid,
10,10-dibutyl-8,12-dioxo-4,16-diundecyl-, diisoctyl ester (9CI) (CA
INDEX NAME)

PAGE 1-A

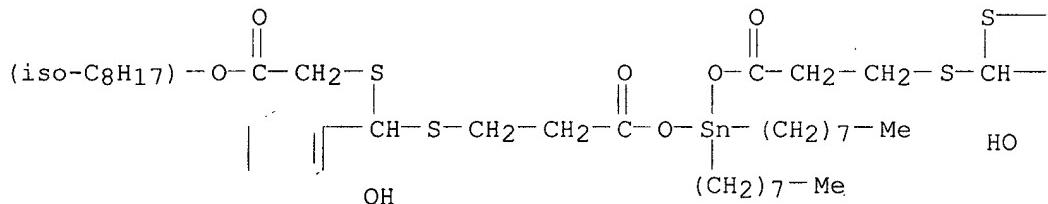


PAGE 1-B

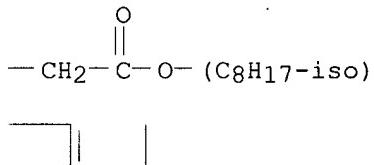


RN 50828-75-6 HCAPLUS
CN 9,11-Dioxa-3,5,15,17-tetrathia-10-stannanonadecanedioic acid,
4,16-bis(2-hydroxyphenyl)-10,10-diethyl-8,12-dioxo-, diisooctyl ester
(9CI) (CA INDEX NAME)

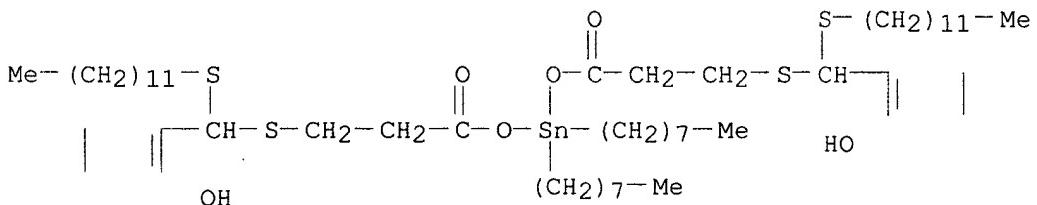
PAGE 1-A



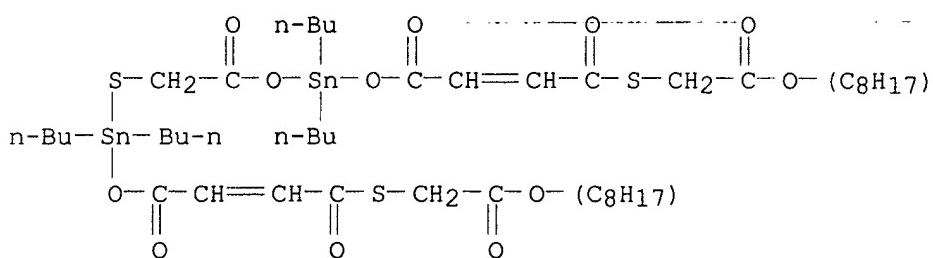
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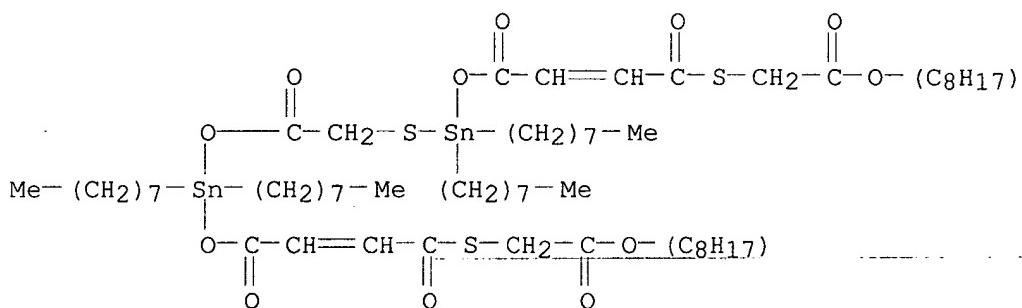
RN 50928-96-6 HCPLUS
CN Phenol, 2,2'-[1,13-bis(dodecylthio)-7,7-dioctyl-5,9-dioxo-6,8-dioxa-2,12-dithia-7-stannatridecane-1,13-diyl]bis- (9CI) (CA INDEX NAME)



RN 58993-98-9 HCPLUS
CN 8,10,15-Trioxa-3,13,20-trithia-9,14-distannadocosa-5,17-dienedioic acid,
9,9,14,14-tetrabutyl-4,7,11,16,19-pentaoxo-, diisooctyl ester, (Z,Z)-
(9CI) (CA INDEX NAME)



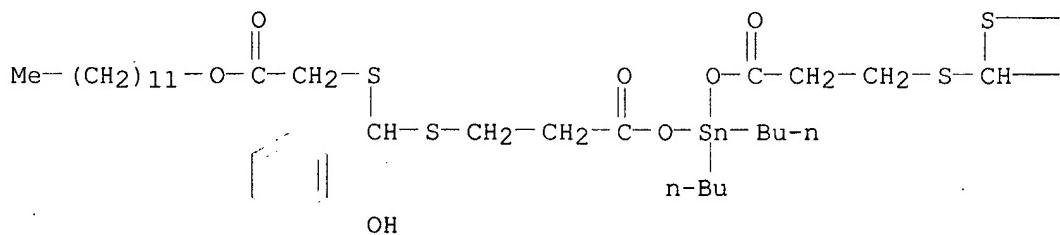
RN 58993-99-0 HCAPLUS

CN 8,10,15-Trioxa-3,13,20-trithia-9,14-distannadocosa-5,17-dienedioic acid,
9,9,14,14-tetraoctyl-4,7,11,16,19-pentaoxo-, diisoctyl ester, (Z,Z)-
(9CI) (CA INDEX NAME)

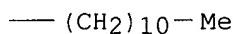
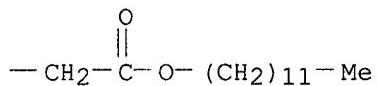
RN 59007-32-8 HCAPLUS

CN 9,11-Dioxa-3,5,15,17-tetrathia-10-stannanonadecanedioic acid,
10,10-dibutyl-4-(2-hydroxyphenyl)-8,12-dioxo-16-undecyl-, didodecyl ester
(9CI) (CA INDEX NAME)

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PAGE 1-B

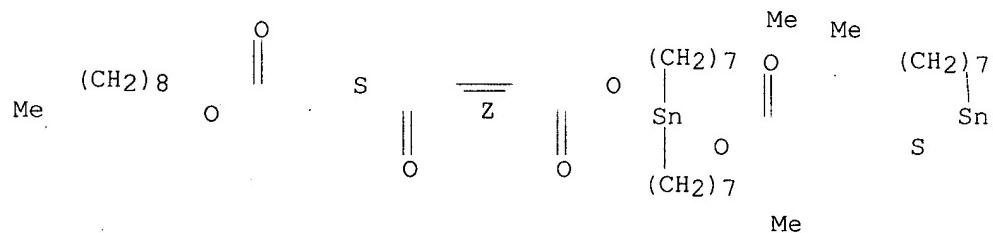


RN 59007-33-9 HCPLUS

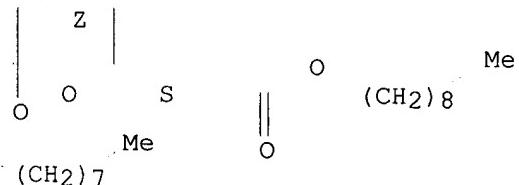
CN 8,10,16-Trioxa-3,14,21-trithia-9,15-distannatricosa-5,18-dienedioic acid,
9,9,15,15-tetraoctyl-4,7,11,17,20-pentaoxo-, dinonyl ester, (Z,Z)- (9CI)
(CA INDEX NAME)

Double bond geometry as shown.

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PAGE 1-B

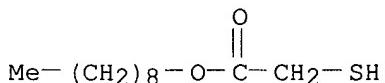


IT 3746-40-5

RL: RCT (Reactant)
(reaction of, with maleic anhydride)

RN 3746-40-5 HCPLUS

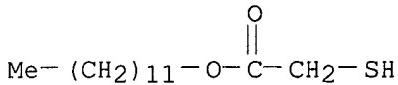
CN Acetic acid, mercapto-, nonyl ester (7CI, 8CI, 9CI) (CA INDEX NAME)



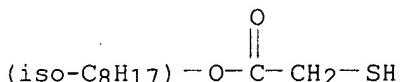
IT 3746-39-2 25103-09-7 30374-01-7

RL: RCT (Reactant)
(reaction of, with mercaptoacid-aldehyde-dialkyltin mixts. in manuf. of
alkyltin mercaptoester stabilizers)

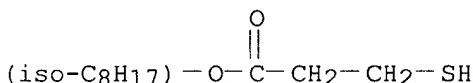
RN 3746-39-2 HCPLUS
 CN Acetic acid, mercapto-, dodecyl ester (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



RN 25103-09-7 HCPLUS
 CN Acetic acid, mercapto-, isoctyl ester (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



RN 30374-01-7 HCPLUS
 CN Propanoic acid, 3-mercaptop-, isoctyl ester (9CI) (CA INDEX NAME)

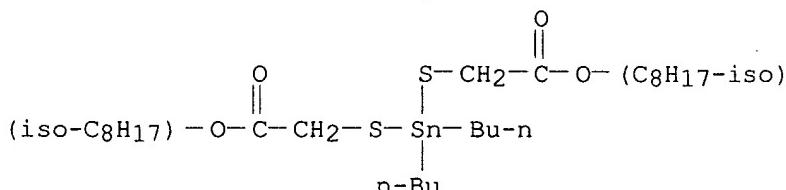


L55 ANSWER 18 OF 38 HCPLUS COPYRIGHT 2002 ACS
 AN 1976:151603 HCPLUS
 DN 84:151603
 TI Esters and mixtures with organotin compounds
 IN Coates, Harold; Collins, John Desmond; Siddiqui, Iftikhar H.
 PA Albright and Wilson Ltd., UK
 SO U.S., 7 pp.
 CODEN: USXXAM
 DT Patent
 LA English
 IC C09K; C08K
 NCL 252400000R
 CC 36-6 (Plastics Manufacture and Processing)
 FAN.CNT 2

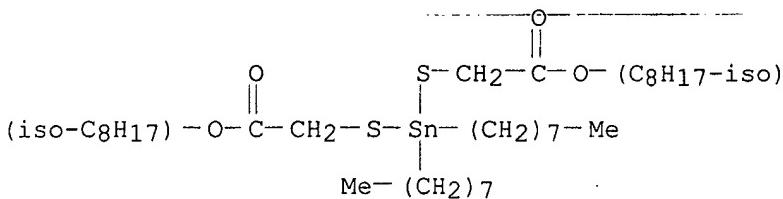
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PI	US 3925246	A	19751209	US 1974-442874	19740215 <--
	CS 181739	P	19780331	CS 1974-1172	19740218
	JP 50135149	A2	19751027	JP 1974-19155	19740219
	HU 170103	P	19770428	HU 1974-AI232	19740219
	CA 1048528	A1	19790213	CA 1974-192981	19740219
	US 3933744	A	19760120	US 1975-586955	19750616 <--
PRAI	GB 1973-7984		19730219		
	US 1974-442874		19740215		
AB	A series of 4 stabilizers with general formula $\text{Me}(\text{CH}_2)^{16}\text{CO}_2\text{CH}_2\text{CH}(\text{OH})\text{CH}_2\text{O}_2\text{C}(\text{CH}_2)_n\text{SCHRS}(\text{CH}_2)_n\text{CO}_2\text{R}_1$. I. (R is Et ₂ CH, $\text{p-MeOC}_6\text{H}_4$, Me(CH ₂) ₁₀ , or o-HOC ₆ H ₄ , R ₁ is isoctyl, n is 1 or 2) was prep'd. and used to improve the heat resistance of PVC [9002-86-2]. Thus, refluxing glyceryl monostearate with HSCH ₂ CH ₂ CO ₂ H in PhMe gave the corresponding ester which was further reacted with HSCH ₂ CH ₂ CO ₂ R ₁ and				

Et₂CHCHO to give stabilizer I (R = Et₂CH, R₁ = isoctyl, n = 2) (II) [58809-61-3]. A compn. contg. PVC (Corvic D55/09) 100, plastilube 30 lubricant 0.5, dioctyltin bis(isooctyl thioglycollate) [26401-97-8] 1.33, and II 0.080 parts was graded 3 on the Gardner Color Scale after heating 12.5 min at 190.degree., while a compn. contg. all the above ingredients except II was graded 7 in the same test.

- ST heat stabilizer PVC mercaptoester; PVC stabilizer glyceryl mercaptoester; alkyltin thioglycollate PVC stabilizer
- IT Heat stabilizers
(glyceryl mercaptoesters-alkyltin thioglycollates as, for PVC)
- IT 9002-86-2
RL: USES (Uses)
(heat stabilizers for, glyceryl mercaptoesters and alkyltin thioglycollates as)
- IT 25168-24-5 26401-97-8 58777-21-2 58809-60-2
58809-61-3 58994-00-6
RL: MOA (Modifier or additive use); USES (Uses)
(heat stabilizers, for PVC)
- IT 107-96-0
RL: RCT (Reactant)
(reaction of, with glyceryl monostearate and aldehydes and isoctyl mercaptoesters)
- IT 97-96-1 112-54-9 123-11-5
RL: RCT (Reactant)
(reaction of, with glyceryl monostearate and mercapto acids and isoctyl mercaptoesters)
- IT 31566-31-1
RL: RCT (Reactant)
(reaction of, with mercaptoacids and aldehydes and isoctyl mercaptoesters)
- IT 25103-09-7 30374-01-7
RL: RCT (Reactant)
(reactions of, with glyceryl monostearate and mercaptoacids and aldehydes)
- IT 68-11-1, reactions
RL: RCT (Reactant)
(with glyceryl monostearate and aldehydes and isoctyl mercaptoesters)
- IT 90-02-8, reactions
RL: RCT (Reactant)
(with glyceryl monostearate and mercaptoacids and isoctyl mercaptoesters)
- IT 25168-24-5 26401-97-8
RL: MOA (Modifier or additive use); USES (Uses)
(heat stabilizers, for PVC)
- RN 25168-24-5 HCAPLUS
- CN Acetic acid, 2,2'-(dibutylstannylene)bis(thio)]bis-, diisooctyl ester (9CI) (CA INDEX NAME)



RN 26401-97-8 HCAPLUS
 CN Acetic acid, 2,2'-(diocetylstannylene)bis(thio)]bis-, diisooctyl ester
 (9CI) (CA INDEX NAME)



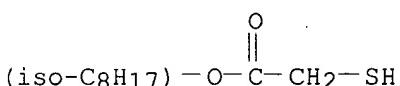
IT 25103-09-7 30374-01-7

RL: RCT (Reactant)

(reactions of, with glyceryl monostearate and mercaptoacids and aldehydes)

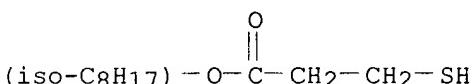
RN 25103-09-7 HCAPLUS

CN Acetic acid, mercapto-, isooctyl ester (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



RN 30374-01-7 HCAPLUS

CN Propanoic acid, 3-mercaptop-, isooctyl ester (9CI) (CA INDEX NAME)



L55 ANSWER 19 OF 38 HCAPLUS COPYRIGHT 2002 ACS

AN 1976:136518 HCAPLUS

DN 84:136518

TI Novel stabilized polymer compositions

IN Coates, Harold; Collins, John Desmond; Siddiqui, Iftikhar H.

PA Albright and Wilson Ltd., UK

SO U.S., 11 pp.

CODEN: USXXAM

DT Patent

LA English

IC C08G

NCL 260045750S

CC 36-2 (Plastics Manufacture and Processing)

Section cross-reference(s): 29

Not review

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 3933750	A	19760120	US 1974-490240	19740722 <--
PRAI	US 1973-359176		19730510		

AB S-contg. Sn compns. with a lower Sn content than conventional S-contg. organotin compds. are useful stabilizers for halogen-contg. vinyl and vinylidene resins. Thus, salicylaldehyde

[90-02-8] 24.4, 2-ethylhexyl thioglycolate [7659-86-1] 40.8, and .beta.-mercaptopropionic acid [107-96-0] 21.2 g were refluxed in 150 ml. toluene in the presence of 0.1 g p-toluenesulfonic acid until the calcd. amt. of water had collected. After cooling 24.9 g dibutyltin oxide (I) [818-08-6] was added, the mixt. was refluxed, 24.9 g I was added, the mixt. was refluxed, and 15.0 g 1,6-hexanedithiol [1191-43-1] was added dropwise to give [Me(CH₂)₃CH₂O₂C₂CH₂SCHRSCH₂CH₂CO₂SnBu₂S(CH₂)₃]₂ (R = o-hydroxyphenyl) (II) [58824-65-0] which was an effective stabilizer for rigid PVC [9002-86-2] either alone or in an admixt with monobutyltin compds. and hindered phenols. Six similar stabilizers were also prep'd.

ST tin sulfur stabilizer PVC; vinyl chloride polymer stabilizer; organothiotin compd stabilizer PVC

IT Heat stabilizers
(organothiotin compds., for vinyl chloride polymers)

IT 58824-65-0
RL: MOA (Modifier or additive use); USES (Uses)
(heat stabilizers, for vinyl chloride polymers)

IT 107-96-0
RL: RCT (Reactant)
(reaction of, with aldehydes, dialkyltin oxides, hexanedithiol and thioglycolates)

IT 1191-43-1
RL: RCT (Reactant)
(reaction of, with aldehydes, dialkyltin oxides, mercaptoacids and thioglycolates)

IT 818-08-6 870-08-6
RL: RCT (Reactant)
(reaction of, with aldehydes, hexanedithiol, mercaptoacids and thioglycolates)

IT 58824-63-8
RL: RCT (Reactant)
(reaction of, with dibutyltin oxide and dodecylmercaptan)

IT 58853-41-1
RL: RCT (Reactant)
(reaction of, with dibutyltin oxide and hexanedithiol)

IT 25103-09-7
RL: RCT (Reactant)
(reaction of, with dibutyltin oxide, dodecylaldehyde, hexanedithiol and mercaptopropionic acid)

IT 90-02-8, reactions
RL: RCT (Reactant)
(reaction of, with dibutyltin oxide, ethylhexyl thioglycolate, hexanedithiol and mercaptopropionic acid)

IT 77-85-0
RL: RCT (Reactant)
(reaction of, with dibutyltin oxide, hexanedithiol, isoctyl alcohol, maleic anhydride and mercaptopropionic acid)

IT 26952-21-6
RL: RCT (Reactant)
(reaction of, with dibutyltin oxide, hexanedithiol, maleic anhydride, mercaptopropionic acid and trimethylethane)

IT 112-54-9
RL: RCT (Reactant)
(reaction of, with dibutyltin oxide, hexanedithiol, mercaptopropionic acid and isoctyl thioglycolate)

IT 7659-86-1
RL: RCT (Reactant)
(reaction of, with dibutyltin oxide, hexanedithiol, mercaptopropionic acid and silicylaldehyde)

IT 2370-71-0
 RL: RCT (Reactant)
 (reaction of, with hexanedithiol and dodecylaldehyde-isooctyl thioglycolate-mercaptopropionic acid reaction products)

IT 58824-60-5
 RL: RCT (Reactant)
 (reaction of, with monooctyl maleate and hexanedithiol)

IT 9002-86-2
 RL: USES (Uses)
 (stabilizers for, organothiotin compds. as)

IT 58824-59-2 58824-61-6 58824-62-7
 58824-64-9 58828-55-0 58832-17-0
 RL: USES (Uses)
 (stabilizers, for **vinyl** chloride polymers)

IT 108-31-6, reactions
 RL: RCT (Reactant)
 (with dibutyltin oxide, hexanedithiol, isooctyl alcohol, mercaptopropionic acid and trimethylethane)

IT 115-77-5, reactions
 RL: RCT (Reactant)
 (with dioctyltin oxide, hexanedithiol, lauric acid and mercaptopropionic acid)

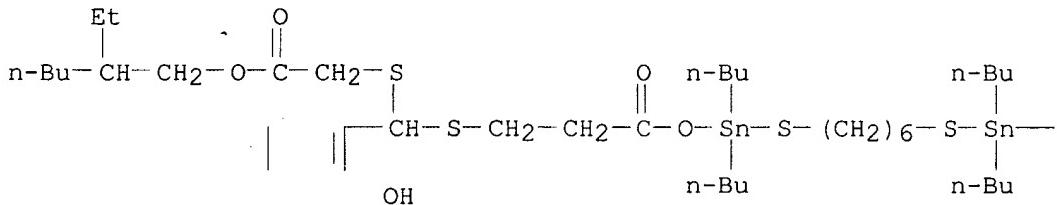
IT 143-07-7, reactions
 RL: RCT (Reactant)
 (with dioctyltin oxide, hexanedithiol, mercaptopropionic acid and pentaerythritol)

IT 58824-65-0
 RL: MOA (Modifier or additive use); USES (Uses)
 (heat stabilizers, for **vinyl** chloride polymers)

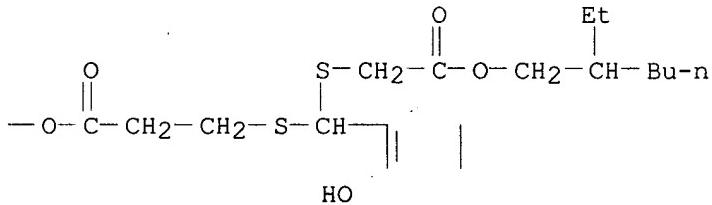
RN 58824-65-0 HCAPLUS

CN 9,20-Dioxa-3,5,11,18,24,26-hexathia-10,19-distannaoctacosanedioic acid, 10,10,19,19-tetrabutyl-4,25-bis(2-hydroxyphenyl)-8,21-dioxo-, bis(2-ethylhexyl) ester ..(9CI) ..(CA INDEX NAME)

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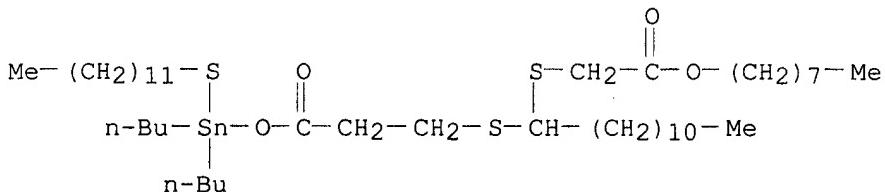


PAGE 1-B

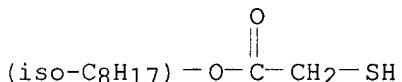


IT 58853-41-1

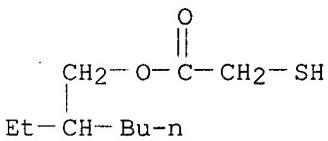
RL: RCT (Reactant)
 (reaction of, with dibutyltin oxide and hexanedithiol)
 RN 58853-41-1 HCPLUS
 CN 9-Oxa-3,5,11-trithia-10-stannatricosanoic acid, 10,10-dibutyl-8-oxo-4-undecyl-, octyl ester (9CI) (CA INDEX NAME)



IT 25103-09-7
 RL: RCT (Reactant)
 (reaction of, with dibutyltin oxide, dodecylaldehyde, hexanedithiol and mercaptopropionic acid)
 RN 25103-09-7 HCPLUS
 CN Acetic acid, mercapto-, isoctyl ester (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

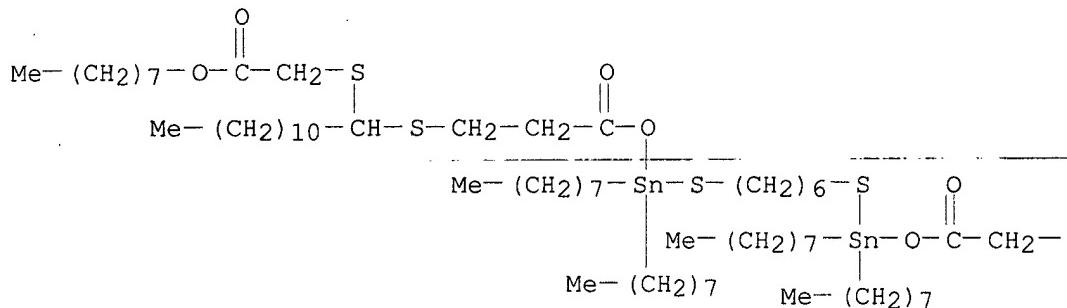


IT 7659-86-1
 RL: RCT (Reactant)
 (reaction of, with dibutyltin oxide, hexanedithiol, mercaptopropionic acid and silicylaldehyde)
 RN 7659-86-1 HCPLUS
 CN Acetic acid, mercapto-, 2-ethylhexyl ester (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

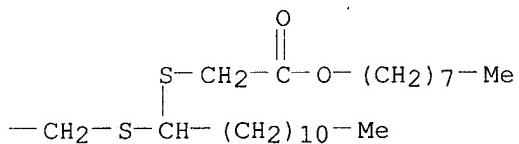


IT 58824-59-2 58824-61-6 58824-62-7
 58824-64-9 58828-55-0 58832-17-0
 RL: USES (Uses)
 (stabilizers, for vinyl chloride polymers)
 RN 58824-59-2 HCPLUS
 CN 9,20-Dioxa-3,5,11,18,24,26-hexathia-10,19-distannaoctacosanedioic acid, 10,10,19,19-tetraoctyl-8,21-dioxo-4,25-diundecyl-, dioctyl ester (9CI) (CA INDEX NAME)

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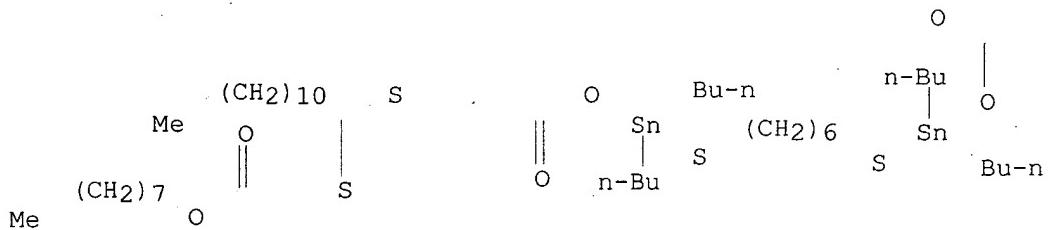


RN 58824-61-6 HCAPLUS

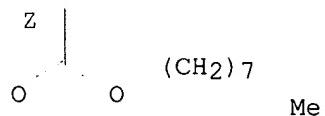
CN 5,16-Dioxa-7,14,20,22-tetrathia-6,15-distannatetracos-2-enedioic acid,
6,6,15,15-tetrabutyl-4,17-dioxo-21-undecyl-, dioctyl ester, (Z)- (9CI)
(CA INDEX NAME)

Double bond geometry as shown.

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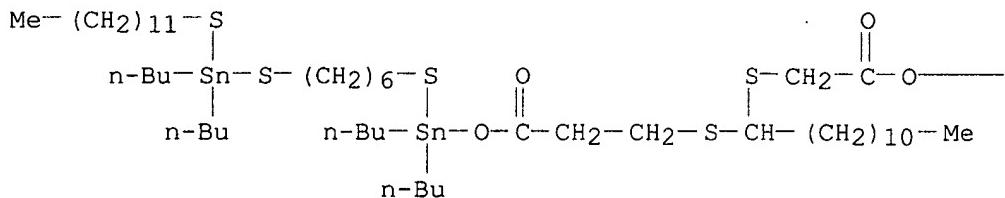
PAGE 1-B



RN 58824-62-7 HCAPLUS

CN 9-Oxa-3,5,11,18,20-pentathia-10,19-distannadotriacontanoic acid,
 10,10,19,19-tetrabutyl-8-oxo-4-undecyl-, octyl ester (9CI) (CA INDEX
 NAME)

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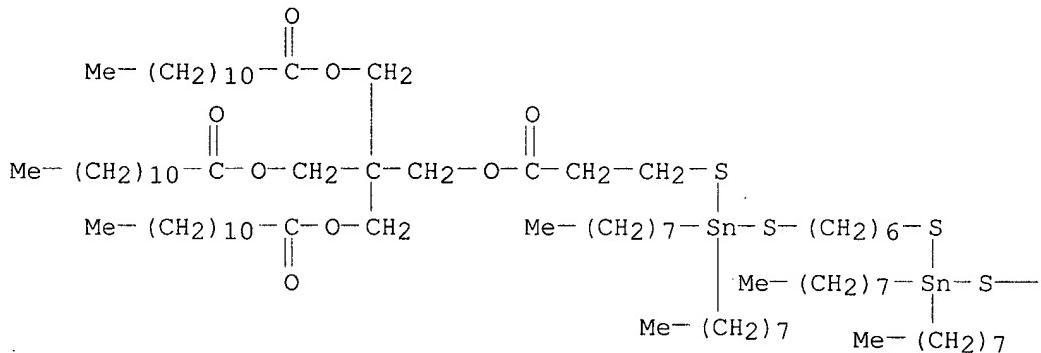
PAGE 1-B

— (CH₂)₇—Me

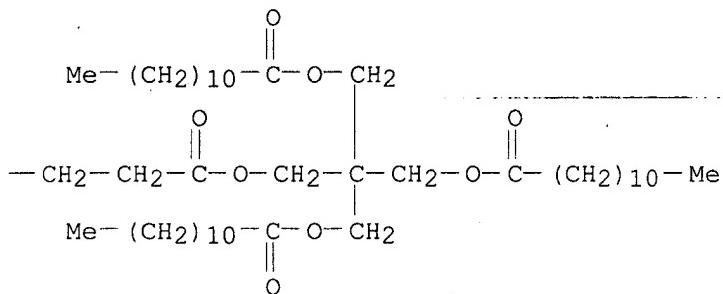
RN 58824-64-9 HCPLUS

CN 4,6,13,15-Tetrathia-5,14-distannaoctadecanedioic acid,
 5,5,14,14-tetraoctyl-, bis[3-[(1-oxododecyl)oxy]-2,2-bis[[(1-
 oxododecyl)oxy]methyl]propyl] ester (9CI) (CA INDEX NAME)

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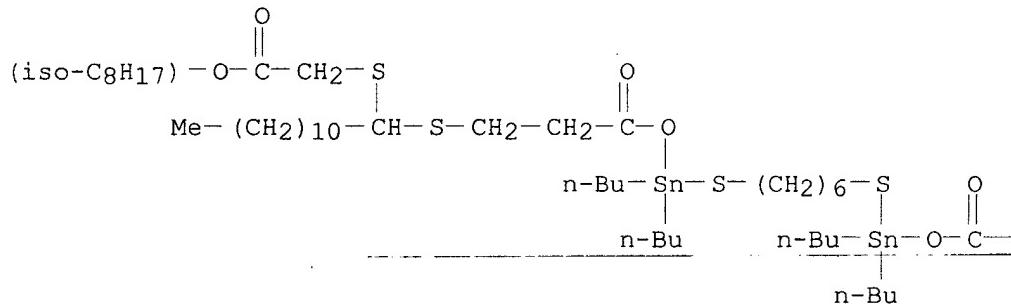
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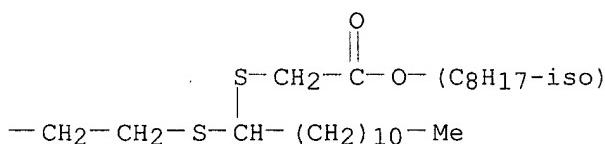
RN 58828-55-0 HCAPLUS

CN 9,20-Dioxa-3,5,11,18,24,26-hexathia-10,19-distannaoctacosanedioic acid,
 10,11,19,19-tetrabutyl-8,21-dioxo-4,25-diundecyl-, diisoctyl ester (9CI)
 (CA INDEX NAME)

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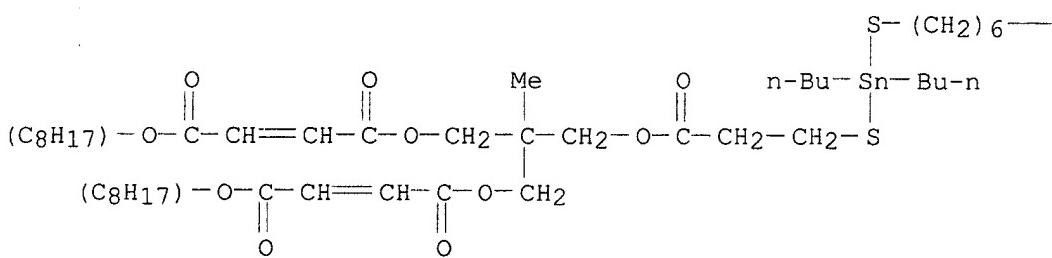
PAGE 1-B



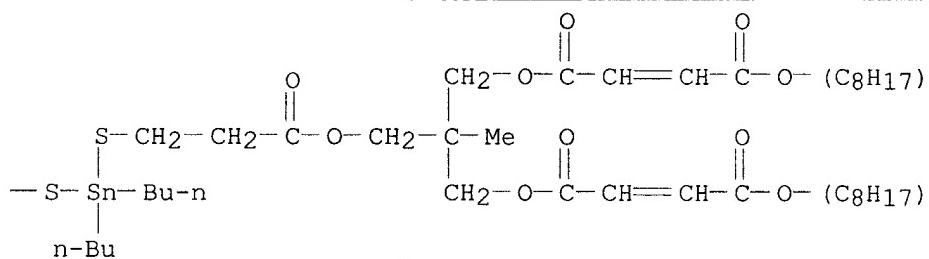
RN 58832-17-0 HCAPLUS

CN 5,9,28,32-Tetraoxa-13,15,22,24-tetrathia-14,23-distannahexatriaconta-2,34-dienedioic acid, 14,14,23,23-tetrabutyl-7,30-bis[[[4-(isoctyloxy)-1,4-dioxo-2-butanyl]oxy]methyl]-7,30-dimethyl-4,10,27,33-tetraoxo-, diisoctyl ester, (all-Z)- (9CI) (CA INDEX NAME)

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PAGE 1-B



L55 ANSWER 20 OF 38 HCPLUS COPYRIGHT 2002 ACS
 AN 1976:136517 HCPLUS
 DN 84:136517
 TI Esters and mixtures thereof with organotin compounds useful as polymer stabilizers
 IN Coates, Harold; Collins, John Desmond; Siddiqui, Iftikhar H.
 PA Albright and Wilson Ltd., UK
 SO U.S., 8 pp.
 CODEN: USXXAM
 DT Patent
 LA English
 IC C08J
 NCL 260045750S
 CC 36-2 (Plastics Manufacture and Processing)
 Section cross-reference(s): 23, 25
 FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 3933744	A	19760120	US 1975-586955	19750616 <--
	US 3925246	A	19751209	US 1974-442874	19740215 <--
PRAI	GB 1973-7984		19730219		
	US 1974-442874		19740215		
AB	Diglycerides are prep'd. from glycerol mono-.alpha.-stearate (I) [123-94-4] and S-contg. carboxylic acid derivs. and used as costabilizers with org.				

Sn compds. for PVC [9002-86-2]. Thus, 0.1 mole each I and .beta.-mercaptopropionic acid [107-96-0] were refluxed in PhMe contg. p-MeC₆H₄SO₃H to give Me(CH₂)₁₆CO₂CH₂CH(OH)CH₂O₂C(CH₂)₂SH [53151-76-1], to which were added 0.1 mole each 2-ethylbutyraldehyde [97-96-1] and isoocetyl .beta.-mercaptopropionate [30374-01-7] and the mixt. was refluxed to give Me(CH₂)₇CO₂(CH₂)₂SCH(CHEt₂)S(CH₂)CO₂CH₂CH(OH)CH₂O₂C(CH₂)₂M e (II) [58809-61-3]. PVC (100 parts) contg. 1.00 part II and 1.33 parts Bu₂Sn bis(isoocetyl thioglycolate) (III) [25168-24-5] after 10 min at 190.degree. had Gardner color 1 compared to 4-5 for PVC contg. only III.

ST PVC heat stabilized; glyceride dithio heat stabilizer; thio glyceride heat stabilizer; mercaptopropionate deriv heat stabilizer

IT Heat stabilizers
(dithio glycerides contg. dialkyltin thioglycolates, for PVC)

IT 9002-86-2
RL: USES (Uses)
(heat stabilizers for, dithio glycerides and organotin thioglycolates as)

IT 58777-20-1 58777-21-2 58809-60-2 58809-61-3
RL: MOA (Modifier or additive use); USES (Uses)
(heat stabilizers, contg. dialkyltin bis(isoocetyl thioglycolate), for PVC)

IT 25168-24-5 26401-97-8
RL: MOA (Modifier or additive use); USES (Uses)
(heat stabilizers, contg. dithio glycerides, for PVC)

IT 30374-01-7
RL: RCT (Reactant)
(reaction of, with aldehydes and mercaptopropionates)

IT 25103-09-7
RL: RCT (Reactant)
(reaction of, with aldehydes and thioglycolates)

IT 53151-76-1
RL: RCT (Reactant)
(reaction of, with ethylbutyraldehyde and isoocetyl mercaptopropionate)

IT 107-96-0
RL: RCT (Reactant)
(reaction of, with glycerol stearate)

IT 123-94-4
RL: RCT (Reactant)
(reaction of, with mercaptoalkanoates)

IT 97-96-1 123-11-5
RL: RCT (Reactant)
(reaction of, with mercaptopropionates)

IT 112-54-9
RL: RCT (Reactant)
(reaction of, with thioglycolates)

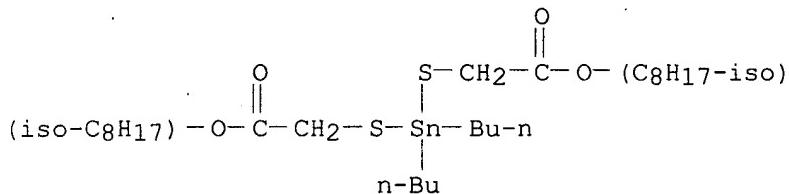
IT 68-11-1, reactions
RL: RCT (Reactant)
(with aldehydes and mercaptans and with glycerol stearate)

IT 90-02-8, reactions
RL: RCT (Reactant)
(with thioglycolates)

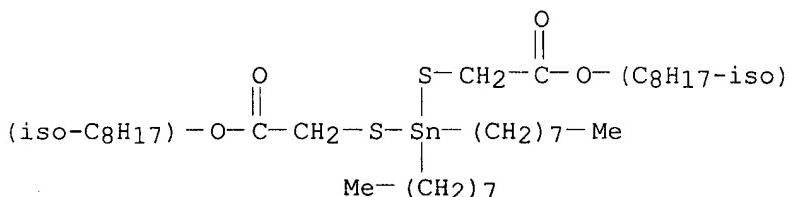
IT 25168-24-5 26401-97-8
RL: MOA (Modifier or additive use); USES (Uses)
(heat stabilizers, contg. dithio glycerides, for PVC)

RN 25168-24-5 HCAPLUS

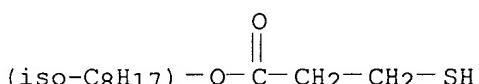
CN Acetic acid, 2,2'-(dibutylstannylene)bis(thio)]bis-, diisoocetyl ester (9CI) (CA INDEX NAME)



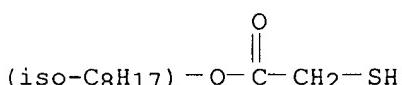
RN 26401-97-8 HCAPLUS
 CN Acetic acid, 2,2'-(dioctylstannylene)bis(thio)]bis-, diisooctyl ester
 (9CI) (CA INDEX NAME)



IT 30374-01-7
 RL: RCT (Reactant)
 (reaction of, with aldehydes-and-mercaptopropionates)
 RN 30374-01-7 HCAPLUS
 CN Propanoic acid, 3-mercpto-, isooctyl ester (9CI) (CA INDEX NAME)



IT 25103-09-7
 RL: RCT (Reactant)
 (reaction of, with aldehydes and thioglycolates)
 RN 25103-09-7 HCAPLUS
 CN Acetic acid, mercapto-, isooctyl ester (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



L55 ANSWER 21 OF 38 HCAPLUS COPYRIGHT 2002 ACS
 AN 1976:122039 HCAPLUS
 DN 84:122039
 TI Dialkytin S,O-.beta.-mercaptopropionate
 IN Itsukaichi, Yoshitoshi; Kawai, Masahiko; Kondo, Tetsuya
 PA Sankyo Organic Chemicals Co., Ltd., Japan
 SO Japan. Kokai, 5 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC C07F

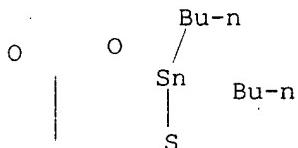
Not reverse

CC 29-8 (Organometallic and Organometalloidal Compounds)

Section cross-reference(s): 36

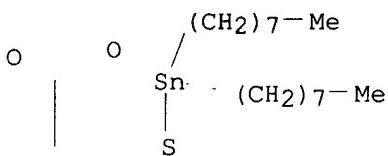
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 50112323	A2	19750903	JP 1974-20602	19740222
	JP 56023432	B4	19810530		
AB	Dialkyltin oxide R1R2SnO (R1,R2 = C1-12 alkyl) (1 mole) and 1 mole .beta.-mercaptopropionate HSCH2CH2CO2R3 (R3 = mono- or trihydric alc. group) was heated in the presence of water and water-sol. solvent and small amt. of HSCH2CH2CO2H was mixed to crystallize dialkyltin S,O-.beta.-mercaptopropionate (I). I is a stabilizer for poly(vinyl chloride) resin. Thus, 2 moles Bu2SnO, 2 moles HSCH2CH2CO2Me and PhMe was heated to 110-degree. and 20 g H2O added with removal of MeOH, H2O and PhMe to give 503 g I (alkyl = Bu). Similarly prep'd. were I (alkyl = Me, octyl).				
ST	polyvinyl chloride stabilizer; dialkyltin mercaptopropionate; methyltin mercaptopropionate; butyltin mercaptopropionate; octyltin mercaptopropionate; dimethyltin mercaptopropionate; dibutyltin mercaptopropionate; dioctyltin mercaptopropionate; tin alkyl mercaptopropionate				
IT	Stabilizing agents (dialkyltin S,O-3-mercaptopropionates, for poly(vinyl chloride) resins)				
IT	78-06-8P 3033-29-2P 32673-05-5P RL: SPN (Synthetic preparation); PREP (Preparation) (prepn. of, for stabilizer for poly(vinyl chloride) resin)				
IT	818-08-6 870-08-6 2273-45-2 RL: RCT (Reactant) (reaction of, with 3-mercaptopropionates)				
IT	2935-90-2 RL: RCT (Reactant) (reaction of, with dialkyltin oxides)				
IT	78-06-8P 3033-29-2P 32673-05-5P RL: SPN (Synthetic preparation); PREP (Preparation) (prepn. of, for stabilizer for poly(vinyl chloride) resin)				
RN	78-06-8 HCPLUS				
CN	6H-1,3,2-Oxathiastannin-6-one, 2,2-dibutyldihydro- (7CI, 8CI, 9CI) (CA INDEX NAME)				



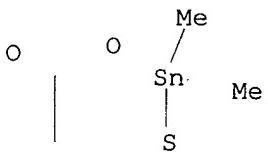
RN 3033-29-2 HCPLUS

CN 6H-1,3,2-Oxathiastannin-6-one, dihydro-2,2-dioctyl- (7CI, 8CI, 9CI) (CA INDEX NAME)



RN 32673-05-5 HCPLUS

CN 6H-1,3,2-Oxathiastannin-6-one, dihydro-2,2-dimethyl- (9CI) (CA INDEX NAME)

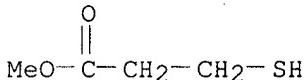


IT 2935-90-2

RL: RCT (Reactant)
(reaction of, with dialkytin oxides)

RN 2935-90-2 HCPLUS

CN Propanoic acid, 3-mercaptop-, methyl ester (9CI) (CA INDEX NAME)



L55 ANSWER 22 OF 38 HCPLUS COPYRIGHT 2002 ACS

AN 1976:44363 HCPLUS

DN 84:44363

TI Organotin mercaptides

IN Molt, Kenneth R.

PA Cincinnati Milacron Chemicals, Inc., USA

SO Ger. Offen., 47 pp.

CODEN: GWXXBX

DT Patent

LA German

IC C07F

CC 29-8 (Organometallic and Organometalloidal Compounds)

Section cross-reference(s): 35

FAN.CNT 4

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 2503554	A1	19750911	DE 1975-2503554	19750129
	DE 2503554	B2	1977-0818-		
	US 3970678	A	19760720	US 1974-449435	19740308 <--
	US 3931263	A	19760106	US 1974-479142	19740613 <--
PRAI	US 1974-449435		19740308		
	US 1974-479142		19740613		
AB	Approx. 20 methyltin thioethers, e.g., [(C ₈ H ₁₇ O ₂ CCH ₂ S)2SnMe]2S, MeSn(SCH ₂ CO ₂ C ₈ H ₁₇) ₃ , [(C ₇ H ₁₅ CO ₂ CH ₂ CH ₂ S)2SnMe]2S, Me ₂ Sn(SCH ₂ Ph)SCH ₂ CO ₂ C ₈ H ₁₇ , etc. were prep'd. E.g., Me ₂ SnCl ₂ and Na ₂ S gave				

Me₂SnS, which, with ClCH₂CH₂O₂CC₇H₁₅, gave Me₂SnClSCH₂CH₂O₂CC₇H₁₅. This treated with HSCH₂CH₂O₂CC₇H₁₅ gave Me₂Sn(SCH₂CH₂O₂CC₇H₁₅)₂. The methyltin thioethers were stabilizers for **polyvinyl chloride**.

ST stannane alkylthio; tin methyl alkylthio; sulfide methyltin; thioether methyltin; polymer stabilizer methyltin thioether; **polyvinyl chloride** stabilizer methyltin thioether

IT Polymers, uses and miscellaneous

RL: USES (Uses)
(stabilizers, alkyltin thioethers, for **polyvinyl chloride**)

IT 26636-01-1P 26896-31-1P 53040-42-9P
57807-81-5P 57807-82-6P 57807-83-7P
57807-84-8P 57807-85-9P 57807-86-0P
57807-87-1P 57807-88-2P 57807-89-3P
57813-59-9P 57813-60-2P 57813-61-3P
57813-62-4P 57813-63-5P 57813-64-6P
57813-65-7P

RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of)

IT 4808-30-4 13269-74-4 15666-29-2
33397-79-4

RL: RCT (Reactant)
(reaction with isoctyl chloroacetate)

IT 589-76-4 30753-73-2 57807-80-4

RL: RCT (Reactant)
(reaction with methyltin sulfides)

IT 753-73-1 993-16-8

RL: RCT (Reactant)
(reaction with sodium sulfide)

IT 25103-09-7 57813-59-9

RL: RCT (Reactant)
(reaction with tin chlorides)

IT 9002-86-2

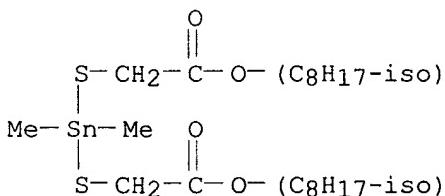
RL: PROC (Process)
(stabilization of, with alkyltin thioethers)

IT 26636-01-1P 26896-31-1P 53040-42-9P
57807-81-5P 57807-82-6P 57807-83-7P
57807-84-8P 57807-85-9P 57807-86-0P
57807-87-1P 57807-88-2P 57807-89-3P
57813-59-9P 57813-60-2P 57813-61-3P
57813-62-4P 57813-63-5P 57813-64-6P
57813-65-7P

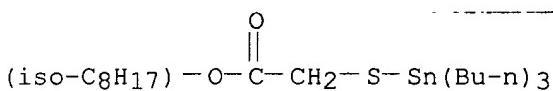
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of)

RN 26636-01-1 HCPLUS

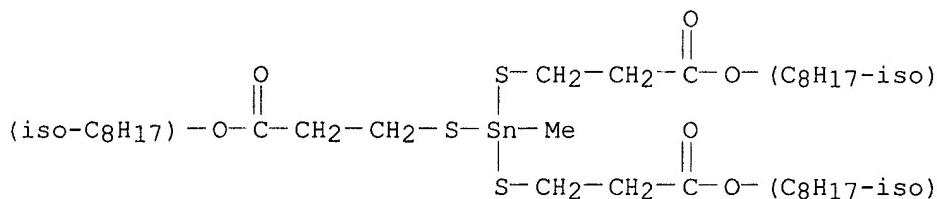
CN Acetic acid, 2,2'-(dimethylstannylene)bis(thio)]bis-, diisooctyl ester (9CI) (CA INDEX NAME)



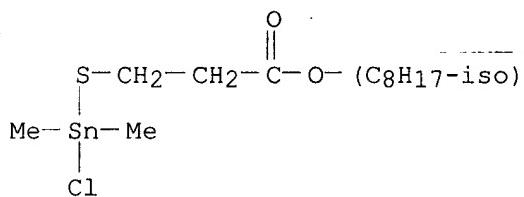
RN 26896-31-1 HCPLUS
CN Acetic acid, [(tributylstannyl)thio]-, isoctyl ester (8CI, 9CI) (CA INDEX NAME)



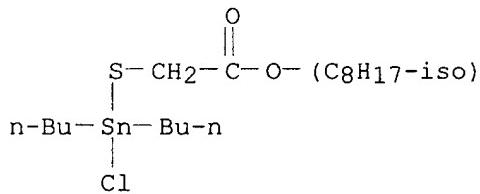
RN 53040-42-9 HCAPLUS
 CN Propanoic acid, 3,3',3'''-[(methylstannylidyne)tris(thio)]tris-, triisooctyl ester (9CI) (CA INDEX NAME)



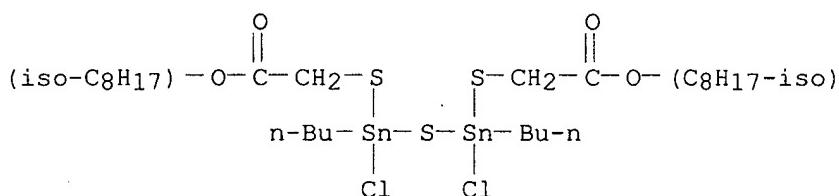
RN 57807-81-5 HCAPLUS
 CN Propanoic acid, 3-[(chlorodimethylstannyl)thio]-, isooctyl ester (9CI) (CA INDEX NAME)



RN 57807-82-6 HCAPLUS
 CN Acetic acid, [(dibutylchlorostannyl)thio]-, isooctyl ester (9CI) (CA INDEX NAME)

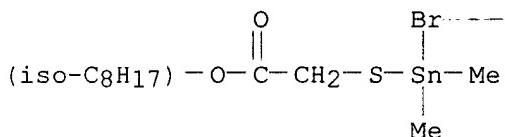


RN 57807-83-7 HCAPLUS
 CN Acetic acid, 2,2'-'[(1,3-dibutyl-1,3-dichloro-1,3-distannathianediyl)bis(thio)]bis-, diisooctyl ester (9CI) (CA INDEX NAME)



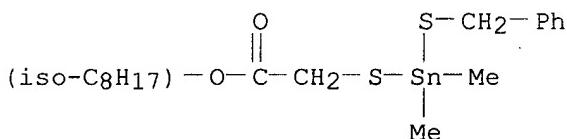
RN 57807-84-8 HCPLUS

CN Acetic acid, [(bromodimethylstannyl)thio]-, isoctyl ester (9CI) (CA INDEX NAME)



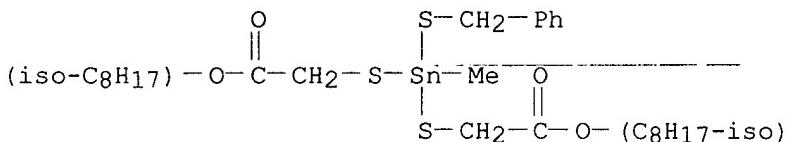
RN 57807-85-9 HCPLUS

CN Acetic acid, [[dimethyl[(phenylmethyl)thio]stannyl]thio]-, isoctyl ester (9CI) (CA INDEX NAME)



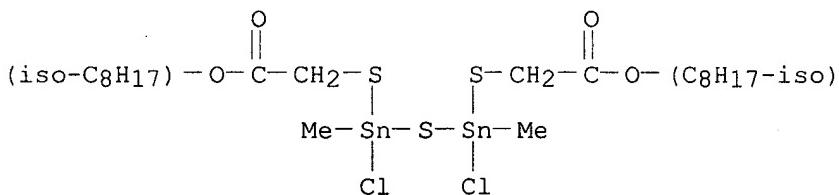
RN 57807-86-0 HCPLUS

CN Acetic acid, 2,2'-[[methyl[(phenylmethyl)thio]stannylene]bis(thio)]bis-, diisooctyl ester (9CI) (CA INDEX NAME)



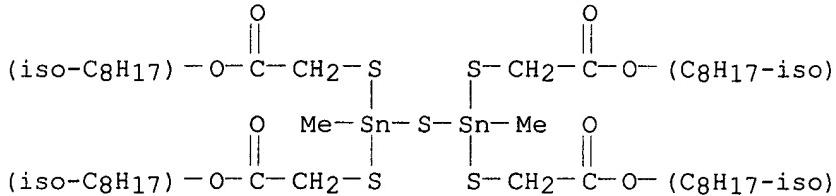
RN 57807-87-1 HCPLUS

CN Acetic acid, 2,2'-[(1,3-dichloro-1,3-dimethyl-1,3-distannathianediyl)bis(thio)]bis-, diisooctyl ester (9CI) (CA INDEX NAME)



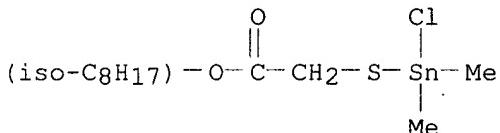
RN 57807-88-2 HCAPLUS

CN Acetic acid, 2,2',2'',2'''-[(1,3-dimethyl-1,3-distannathianediylidene)tetrakis(thio)]tetrakis-, tetraisoctyl ester (9CI) (CA INDEX NAME)



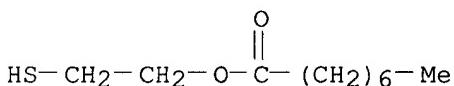
RN 57807-89-3 HCAPLUS

CN Acetic acid, [(chlorodimethylstannylyl)thio]-, isoctyl ester (9CI) (CA INDEX NAME)



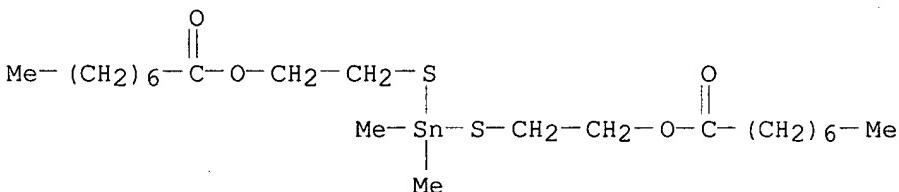
RN 57813-59-9 HCAPLUS

CN Octanoic acid, 2-mercaptoproethyl ester (9CI) (CA INDEX NAME)



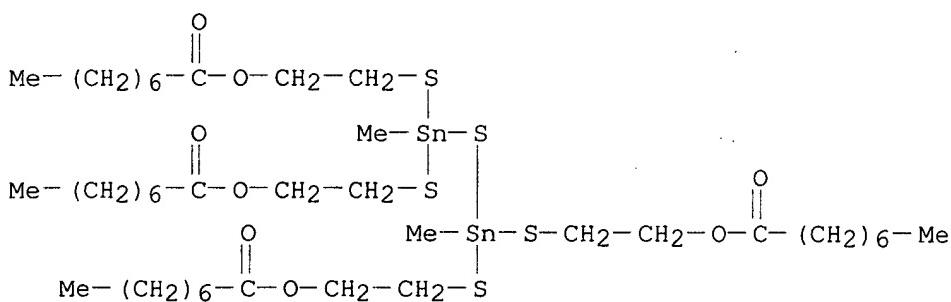
RN 57813-60-2 HCAPLUS

CN Octanoic acid, (dimethylstannylene)bis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

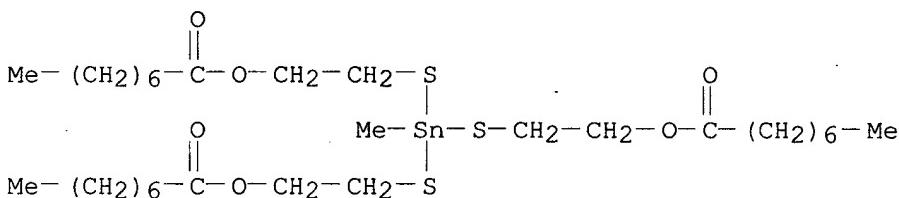


RN 57813-61-3 HCAPLUS

CN Octanoic acid, (1,3-dimethyl-1,3-distannathianediylidene)tetrakis(thio-2,1-ethanediyl) ester (9CI) (CA INDEX NAME)

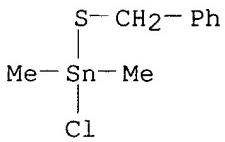


RN 57813-62-4 HCPLUS

CN Octanoic acid, (methylstannylidyne)tris(thio-2,1-ethanediyl) ester (9CI)
(CA INDEX NAME)

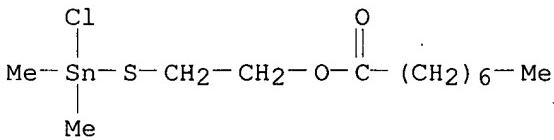
RN 57813-63-5 HCPLUS

CN Stannane, chlorodimethyl[(phenylmethyl)thio]- (9CI) (CA INDEX NAME)



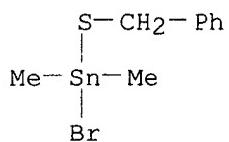
RN 57813-64-6 HCPLUS

CN Octanoic acid, 2-[chlorodimethylstannylylthio]ethyl ester (9CI) (CA INDEX NAME)



RN 57813-65-7 HCPLUS

CN Stannane, bromodimethyl[(phenylmethyl)thio]- (9CI) (CA INDEX NAME)



IT 4808-30-4 13269-74-4 15666-29-2

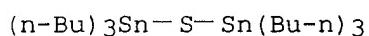
33397-79-4

RL: RCT (Reactant)

(reaction with isoctyl chloroacetate)

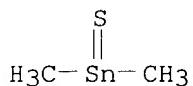
RN 4808-30-4 HCPLUS

CN Distannathiane, hexabutyl- (9CI) (CA INDEX NAME)



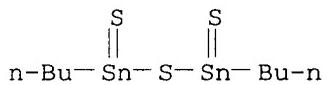
RN 13269-74-4 HCPLUS

CN Stannane, dimethylthioxo- (8CI, 9CI) (CA INDEX NAME)



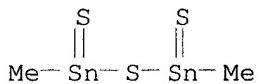
RN 15666-29-2 HCPLUS

CN Distannathiane, dibutylthioxo- (9CI) (CA INDEX NAME)



RN 33397-79-4 HCPLUS

CN Distannathiane, dimethyldithioxo- (9CI) (CA INDEX NAME)



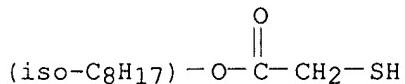
IT 25103-09-7 57813-59-9

RL: RCT (Reactant)

(reaction with tin chlorides)

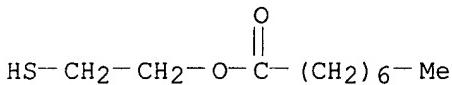
RN 25103-09-7 HCPLUS

CN Acetic acid, mercapto-, isoctyl ester (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



RN 57813-59-9 HCPLUS

CN Octanoic acid, 2-mercaptoproethyl ester (9CI) (CA INDEX NAME)

L55 ANSWER 23 OF 38 HCAPLUS COPYRIGHT 2002 ACS
AN 1976:18407 HCAPLUS

DN 84:18407

TI Monoalkyltin heat stabilizers for poly(vinyl chloride)

IN Abeler, Gerd

PA Ciba-Geigy A.-G., Switz.

SO Ger. Offen., 18 pp.

CODEN: GWXXBX

DT Patent

LA German

IC C07F; C08L; C08K

CC 36-6 (Plastics Manufacture and Processing)

Section cross-reference(s): 29

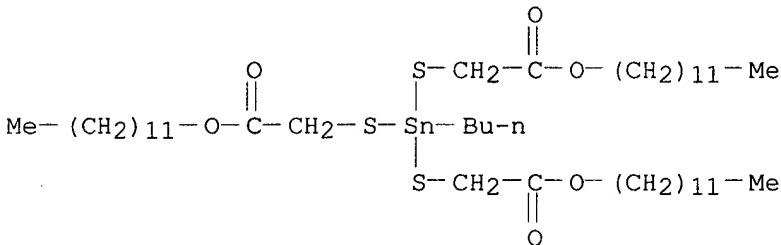
FAN.CNT 3

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 2501331	A1	19750724	DE 1975-2501331	19750115
	CH 588980	A	19770630	CH 1974-620	19740117
	SE 7415001	A	19750718	SE 1974-15001	19741129
	SE 396398	B	19770919		
	SE 396398	C	19790830		
	AU 7476819	A1	19760624	AU 1974-76819	19741224
	BR 7500265	A	19751104	BR 1975-265	19750115
	DD 117686	C	19760120	DD 1975-183644	19750115
	GB 1494771	A	19771214	GB 1975-1673	19750115
	DE 2559820	B1	19790201	DE 1975-2559820	19750115
	DE 2559820	C3	19820422		
	DE 2560037	C2	19840126	DE 1975-2560037	19750115
	BE 824427	A1	19750716	BE 1975-152412	19750116
	NL 7500528	A	19750721	NL 1975-528	19750116
	NL 189858	B	19930316		
	NL 189858	C	19930816		
	FR 2273037	A1	19751226	FR 1975-1249	19750116
	ZA 7500309	A	19760128	ZA 1975-309	19750116
	AT 7500307	A	19760715	AT 1975-307	19750116
	AT 335745	B	19770325		
	ES 433846	A1	19761101	ES 1975-433846	19750116
	IT 1028414	A	19790130	IT 1975-19333	19750116
	JP 50107041	A2	19750823	JP 1975-7678	19750117
	JP 57061052	B4	19821222		
PRAI	CH 1974-620		19740117		
	CH 1974-14308		19741025		

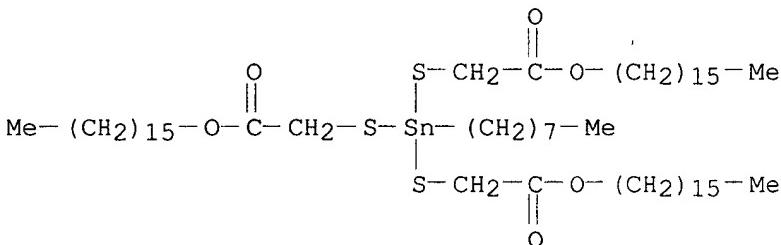
AB The compds. R₁Sn[S(CH₂)_nCO₂R₂]₃ (R₁ = C₁-12 alkyl, vinyl, allyl, Ph, PhCH₂; R₂ = C₁₀-20 alkyl; n = 1-5) are heat stabilizers for vinyl chloride polymers effective at low concns. (0.2-5 phr). Thus, heating MeSnCl₃ [993-16-8] 12.0, HSCH₂CO₂C₁₄H₂₉ [57414-16-1] 43.9, and NaHCO₃ 15 g gives colorless, oily MeSn(SCH₂CO₂C₁₄H₂₉)₃ (I) [57414-17-2]. A mixt. of PVC [9002-86-2] 100, montan wax 0.5, monoglyceride 1.0, and I 1.0 part calendered at 190.degree. requires 25 min for discoloration to bright brownish-yellow.

ST heat stabilizer PVC; tin mercaptide stabilizer; thioglycolate

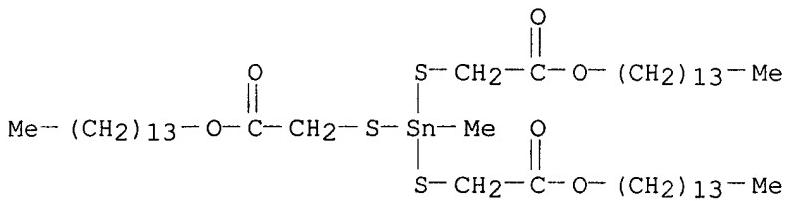
reaction chlorostannane; stannane trichloromethyl reaction thioglycolate
IT Heat stabilizers
(tin mercaptides, for PVC)
IT 9002-86-2
RL: USES (Uses)
(heat stabilizers for, tin mercaptides as)
IT 26292-98-8 57414-15-0 57414-17-2
57414-18-3 57414-19-4 57450-74-5
RL: MOA (Modifier or additive use); USES (Uses)
(heat stabilizers, for PVC)
IT 3746-39-2 10220-46-9 22811-02-5
57414-16-1 57417-85-3 57417-86-4
RL: RCT (Reactant)
(reaction of, with alkyltin compds.)
IT 818-08-6 870-08-6 993-16-8 2273-43-0 26738-80-7 51590-67-1
RL: RCT (Reactant)
(reaction of, with thioglycolates)
IT 26292-98-8 57414-15-0 57414-17-2
57414-18-3 57414-19-4 57450-74-5
RL: MOA (Modifier or additive use); USES (Uses)
(heat stabilizers, for PVC)
RN 26292-98-8 HCPLUS
CN 8-Oxa-3,5-dithia-4-stannaeicosanoic acid, 4-butyl-4-[2-(dodecyloxy)-2-oxoethyl]thio]-7-oxo-, dodecyl ester (9CI) (CA INDEX NAME)



RN 57414-15-0 HCPLUS
CN 8-Oxa-3,5-dithia-4-stannatetracosanoic acid, 4-[2-(hexadecyloxy)-2-oxoethyl]thio]-4-octyl-7-oxo-, hexadecyl ester (9CI) (CA INDEX NAME)

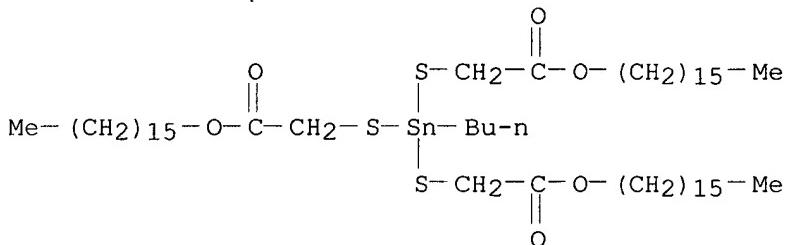


RN 57414-17-2 HCPLUS
CN 8-Oxa-3,5-dithia-4-stannadocosanoic acid, 4-methyl-7-oxo-4-[2-oxo-2-(tetradecyloxy)ethyl]thio]-, tetradecyl ester (9CI) (CA INDEX NAME)



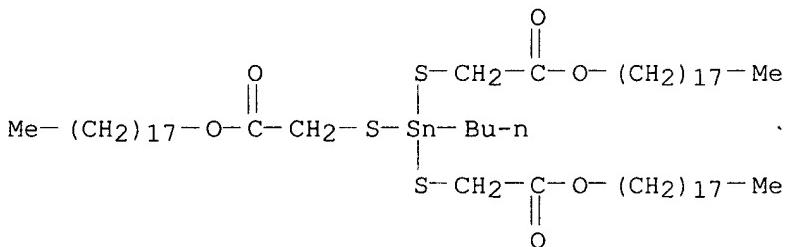
RN 57414-18-3 HCPLUS

CN 8-Oxa-3,5-dithia-4-stannatetracosanoic acid, 4-butyl-4-[[2-(hexadecyloxy)-2-oxoethyl]thio]-7-oxo-, hexadecyl ester (9CI) (CA INDEX NAME)



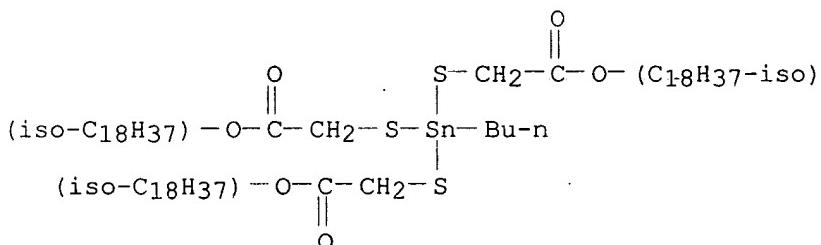
RN 57414-19-4 HCPLUS

CN 8-Oxa-3,5-dithia-4-stannahexacosanoic acid, 4-butyl-4-[[2-(octadecyloxy)-2-oxoethyl]thio]-7-oxo-, octadecyl ester (9CI) (CA INDEX NAME)



RN 57450-74-5 HCPLUS

CN Acetic acid, 2,2'--[butyl[[2-(isoctadecyloxy)-2-oxoethyl]thio]stannylene]bis(thio)]bis-, diisoctadecyl ester (9CI) (CA INDEX NAME)



IT 3746-39-2 10220-46-9 22811-02-5

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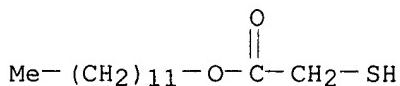
57414-16-1 57417-85-3 57417-86-4

RL: RCT (Reactant)

(reaction of, with alkyltin compds.)

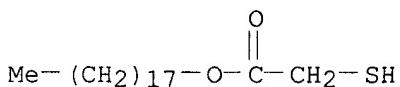
RN 3746-39-2 HCAPLUS

CN Acetic acid, mercapto-, dodecyl ester (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



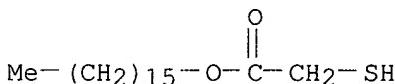
RN 10220-46-9 HCAPLUS

CN Acetic acid, mercapto-, octadecyl ester (7CI, 8CI, 9CI) (CA INDEX NAME)



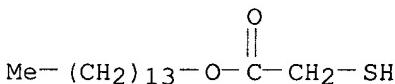
RN 22811-02-5 HCAPLUS

CN Acetic acid, mercapto-, hexadecyl ester (8CI, 9CI) (CA INDEX NAME)



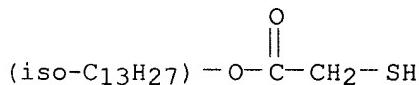
RN 57414-16-1 HCAPLUS

CN Acetic acid, mercapto-, tetradecyl ester (9CI) (CA INDEX NAME)



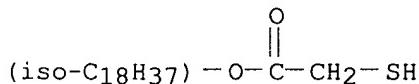
RN 57417-85-3 HCAPLUS

CN Acetic acid, mercapto-, isotridecyl ester (9CI) (CA INDEX NAME)



RN 57417-86-4 HCAPLUS

CN Acetic acid, mercapto-, isoctadecyl ester (9CI) (CA INDEX NAME)



AN 1976:5931 HCAPLUS
 DN 84:5931
 TI Halogen-containing resin compositions
 IN Shinkawa, Hirotoshi
 PA Kyodo Yakuhin Co., Ltd., Japan
 SO Japan. Kokai, 10 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC C08L; C08K; C07C; C07F
 CC 36-6 (Plastics Manufacture and Processing)
 Section cross-reference(s): 29

Not relevant

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 50094054	A2	19750726	JP 1973-134787	19731130
	JP 53037905	B4	19781012		

AB Halogen-contg. resin compns. were stabilized by organotin compds. [Rn(R1O2CZS)mSn]2Z1 (I, R = C4-12 alkyl; R1 = C1-18 alkyl, cycloalkyl, aryl, phenylalkyl, R2OZ2; R2 = C1-4 alkyl, Ph; Z = C1-2 alkylene; Z1 = (di)thiodipropionic acid residue; Z2 = C2-4 alkylene; m, n = 1,2; n + m = 3]. For example, isoctyl thioglycolate [25103-09-7] in toluene was treated with dioctyltin oxide [870-08-6] and then thiodipropionic acid [111-17-1] to give I(R = octyl, R1 = isoctyl, Z = CH₂, Z1 = O₂CCH₂CH₂SCH₂CH₂CO₂, n = 2) (II) [57238-51-4]; also prep'd. were, e.g., I (R = octyl, R1 = isoctyl, Z = CH₂CH₂, Z1 = O₂CCH₂CH₂S₂CH₂CH₂CO₂, n = 2) [57238-55-8], I(R = Bu, R1 = isoctyl, Z = CH₂, Z1 = O₂CCH₂CH₂SCH₂CH₂CO₂, m = 2) [57238-54-7], I(R = octyl, R1 = Bu, Z = CH₂, Z1 = O₂CCH₂CH₂SCH₂CH₂CO₂, n = 2) [57242-94-1], and I (R = octyl, R1 = isodecyl, Z = CH₂, Z1 = O₂CCH₂CH₂SCH₂CH₂CO₂, n = 2) [57238-37-6]. PVC [9002-86-2] contg. 2.5 phr II had better heat resistance, lubricity, and transparency than that contg. R₂Sn(SZCO₂R1)₂ (R = octyl, R1 = isoctyl, Z = CH₂; octyl, 3-methoxybutyl, (CH₂)₂; octyl, isoctyl, (CH₂)₂; Bu, isoctyl, CH₂).

ST organotin heat stabilizer PVC

IT Heat stabilizers

(organotin compds. for PVC)

IT 9002-86-2

RL: USES (Uses)

(heat stabilizers for, organotin compds. as)

IT 57238-37-6 57238-51-4 57238-54-7

57238-55-8 57242-94-1

RL: MOA (Modifier or additive use); USES (Uses)

(heat stabilizers, for PVC)

IT 25103-09-7

RL: RCT (Reactant)

(reaction of, with dioctyl tin oxide and thiodipropionic acid)

IT 111-17-1

RL: RCT (Reactant)

(reaction of, with isoctyl thioglycolate and dioctyltin oxide)

IT 870-08-6

RL: RCT (Reactant)

(reaction of, with isoctyl thioglycolate and thiodipropionic acid)

IT 57238-37-6 57238-51-4 57238-54-7

57238-55-8 57242-94-1

RL: MOA (Modifier or additive use); USES (Uses)

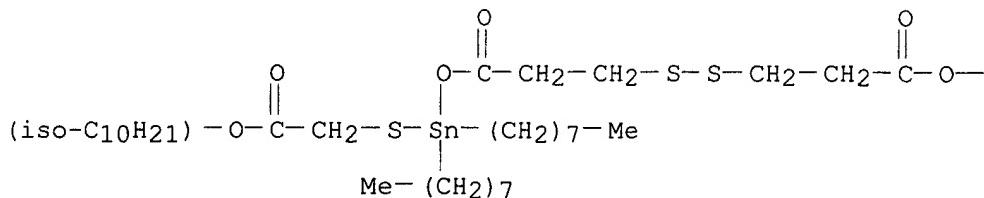
(heat stabilizers, for PVC)

RN 57238-37-6 HCAPLUS

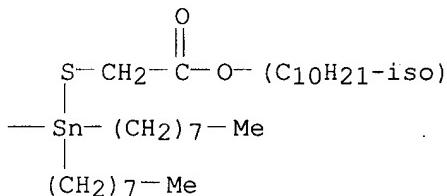
CN 5,14-Dioxa-3,9,10,16-tetrathia-4,15-distannaoctadecanedioic acid,

4,4,15,15-tetraoctyl-6,13-dioxo-, diisooctyl ester (9CI) (CA INDEX NAME)

PAGE 1-A



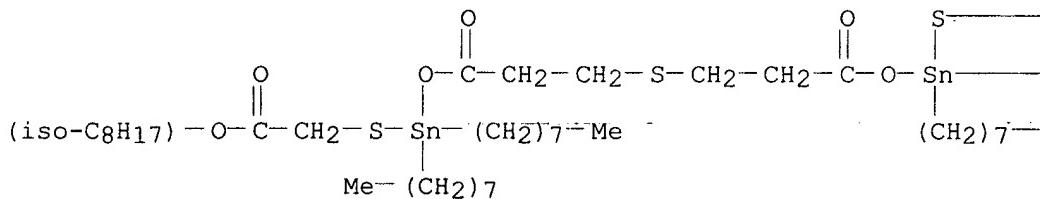
PAGE 1-B



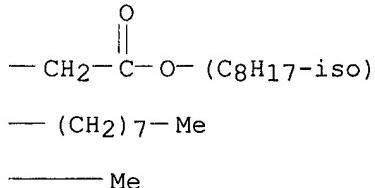
RN 57238-51-4 HCAPLUS

CN 5,13-Dioxa-3,9,15-trithia-4,14-distannaheptadecanedioic acid,
4,4,14,14-tetraoctyl-6,12-dioxo-, diisooctyl ester (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B

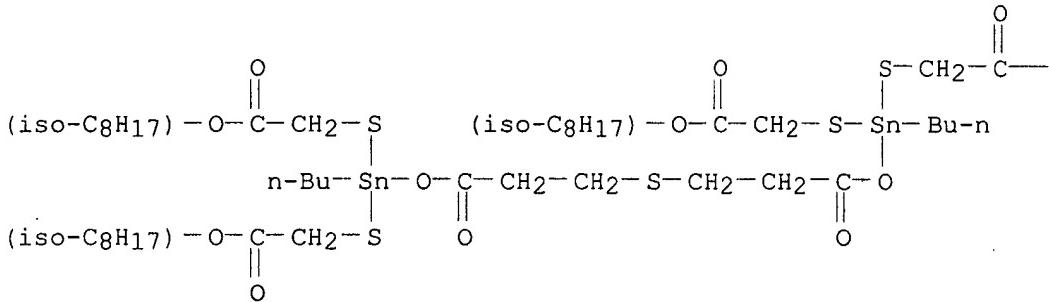


RN 57238-54-7 HCAPLUS

CN 5,13-Dioxa-3,9,15-trithia-4,14-distannaheptadecanedioic acid,
4,14-dibutyl-4,14-bis[[2-(isooctyloxy)-2-oxoethyl]thio]-6,12-dioxo-,

diisooctyl ester (9CI) (CA INDEX NAME)

PAGE 1-A



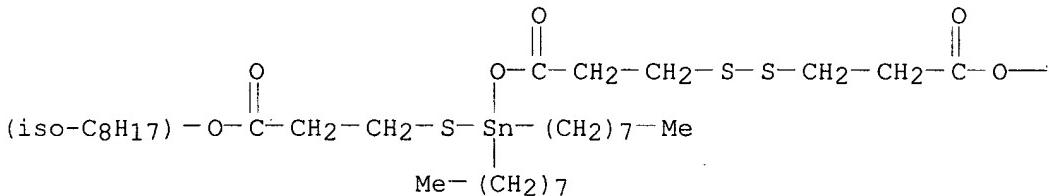
PAGE 1-B

— O— (C₈H₁₇-iso)

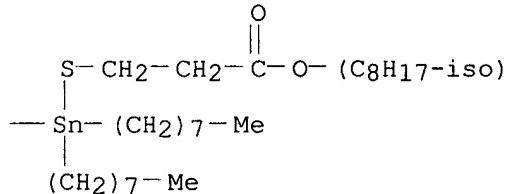
RN 57238-55-8 HCAPLUS

CN 6,15-Dioxa-4,10,11,17-tetrathia-5,16-distannaicosanedioic acid,
5,5,16,16-tetraoctyl-7,14-dioxo-, diisooctyl ester (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B

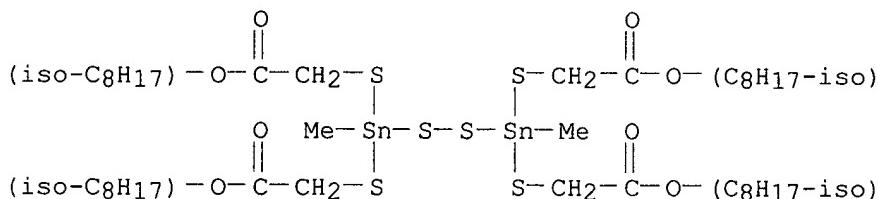


RN 57242-94-1 HCAPLUS

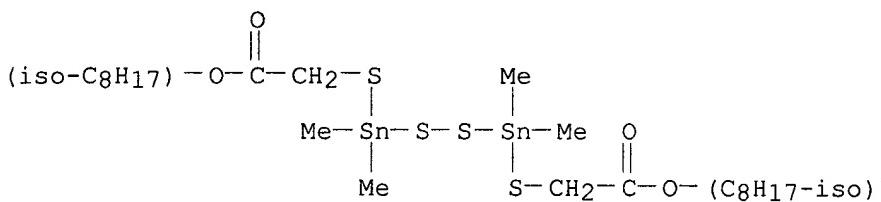
CN 5,14-Dioxa-3,9,10,16-tetrathia-4,15-distannaoctadecanedioic acid,
4,4,15,15-tetraoctyl-6,13-dioxo-, dibutyl ester (9CI) (CA INDEX NAME)

properties of 31 title compds. were described. The early and long term color of PVC samples contg. 0.095% title compds. were given from oven tests at 380.degree.F after initial milling for 5 min at 320.degree.F until catastrophic breakdown occurred.

- ST tin mercaptocarboxylic polysulfide; PVC stabilizer tin polysulfide; heat stabilizer PVC
- IT Heat stabilizers
(organotin mercaptocarboxylic acid ester polysulfides, for PVC)
)
- IT 9002-86-2
RL: USES (Uses)
(heat stabilizers for, organotin mercaptocarboxylic acid ester polysulfides as)
- IT 55230-73-4
RL: MOA (Modifier or additive use); USES (Uses)
(heat stabilizers, for PVC)
- IT 55230-72-3 55230-74-5 55230-75-6
55230-76-7 55230-78-9 55230-79-0
55230-80-3 55231-57-7 55231-58-8
56793-35-2
RL: MOA (Modifier or additive use); USES (Uses)
(heat stabilizers, for halogen-contg. polymers)
- IT 753-73-1 993-16-8
RL: RCT (Reactant)
(reaction of, with isoctylthioglycolate and sodium disulfide)
- IT 22868-13-9
RL: RCT (Reactant)
(reaction of, with methyltin trichloride and isoctyl thioglycolate)
- IT 37488-76-9
RL: RCT (Reactant)
(reaction of, with methyltin trichloride and isoctylthioglycolate)
- IT 25103-09-7
RL: RCT (Reactant)
(reaction of, with methyltin trichloride and sodium disulfide)
- IT 55230-73-4
RL: MOA (Modifier or additive use); USES (Uses)
(heat stabilizers, for PVC)
- RN 55230-73-4 HCPLUS
- CN 3,5,6,8-Tetrathia-4,7-distannadecanedioic acid, 4,7-bis[[2-(isoctyloxy)-2-oxoethyl]thio]-4,7-dimethyl-, diisoctyl ester (9CI) (CA INDEX NAME)

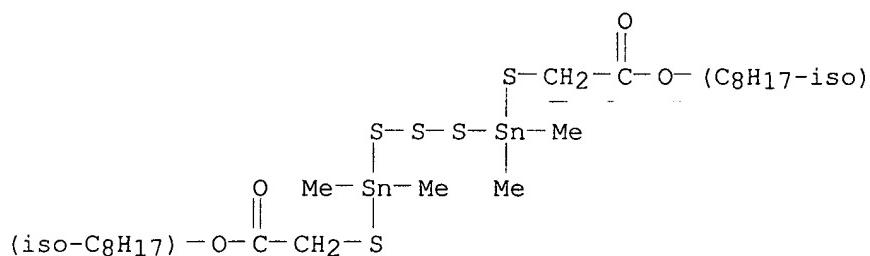


- IT 55230-72-3 55230-74-5 55230-75-6
55230-76-7 55230-78-9 55230-79-0
55230-80-3 55231-57-7 55231-58-8
56793-35-2
RL: MOA (Modifier or additive use); USES (Uses)
(heat stabilizers, for halogen-contg. polymers)
- RN 55230-72-3 HCPLUS
- CN 3,5,6,8-Tetrathia-4,7-distannadecanedioic acid, 4,4,7,7-tetramethyl-, diisoctyl ester (9CI) (CA INDEX NAME)



RN 55230-74-5 HCPLUS

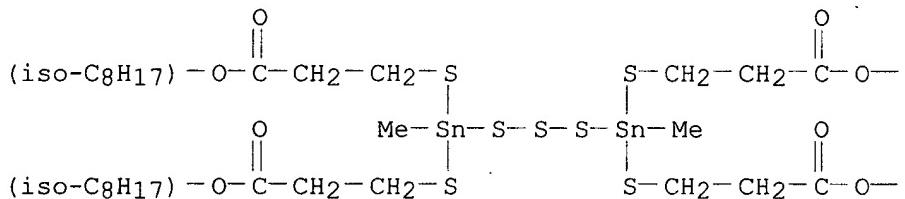
CN 3, 5, 6, 7, 9-Pentathia-4, 8-distannaundecanedioic acid, 4, 4, 8, 8-tetramethyl-, diisooctyl ester (9CI) (CA INDEX NAME)



RN 55230-75-6 HCPLUS

CN 4, 6, 7, 8, 10-Pentathia-5, 9-distannatridecanedioic acid, 5, 9-bis[[3-(isooctyloxy)-3-oxopropyl]thio]-5, 9-dimethyl-, diisooctyl ester (9CI) (CA INDEX NAME)

PAGE 1-A

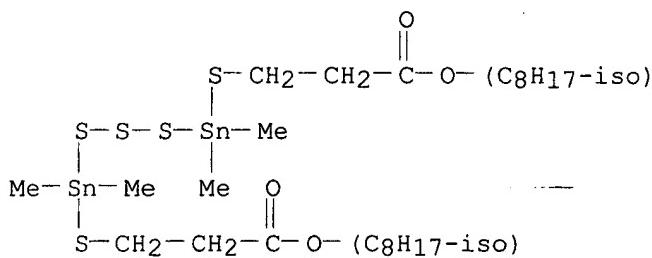


PAGE 1-B

— (C₈H₁₇-iso)— (C₈H₁₇-iso)

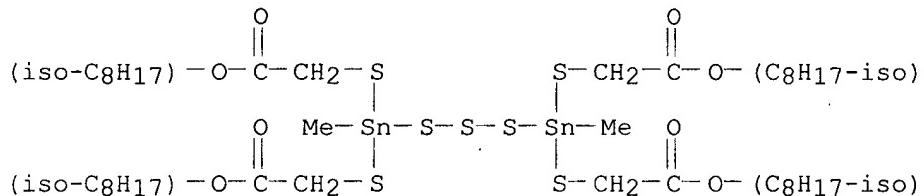
RN 55230-76-7 HCPLUS

CN 4, 6, 7, 8, 10-Pentathia-5, 9-distannatridecanedioic acid, 5, 5, 9, 9-tetramethyl-, diisooctyl ester (9CI) (CA INDEX NAME)



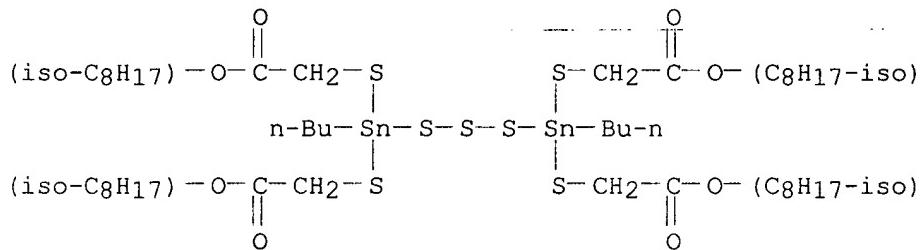
RN 55230-78-9 HCPLUS

CN 3,5,6,7,9-Pentathia-4,8-distannaundecanedioic acid, 4,8-bis[[2-(isoctyloxy)-2-oxoethyl]thio]-4,8-dimethyl-, diisooctyl ester (9CI) (CA INDEX NAME)



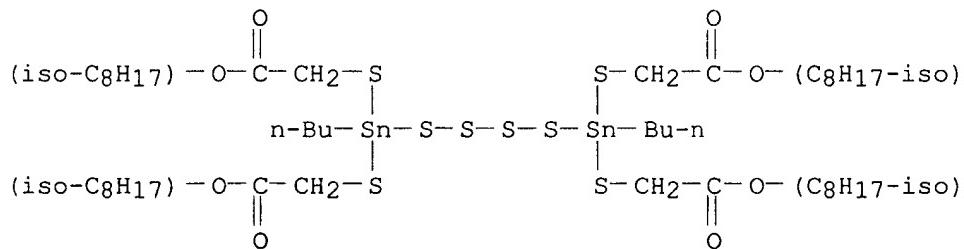
RN 55230-79-0 HCPLUS

CN 3,5,6,7,9-Pentathia-4,8-distannaundecanedioic acid, 4,8-dibutyl-4,8-bis[[2-(isoctyloxy)-2-oxoethyl]thio]-, diisooctyl ester (9CI) (CA INDEX NAME)



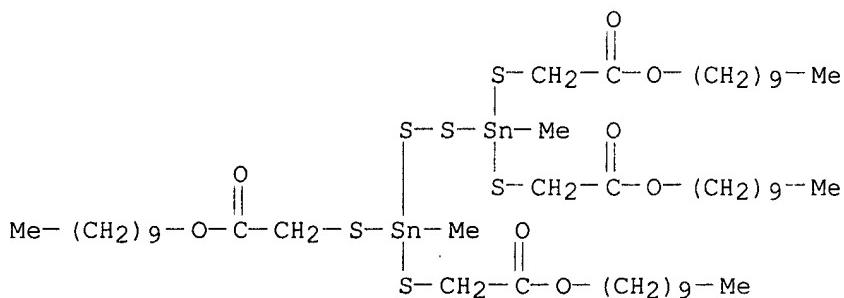
RN 55230-80-3 HCPLUS

CN 3,5,6,7,8,10-Hexathia-4,9-distannadodecanedioic acid, 4,9-dibutyl-4,9-bis[[2-(isoctyloxy)-2-oxoethyl]thio]-, diisooctyl ester (9CI) (CA INDEX NAME)



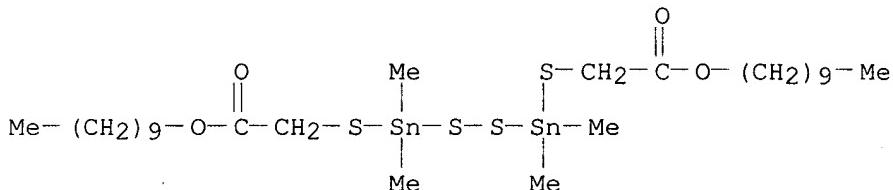
RN 55231-57-7 HCPLUS

CN 3,5,6,8-Tetrathia-4,7-distannadecanedioic acid, 4,7-bis[[2-(decyloxy)-2-oxoethyl]thio]-4,7-dimethyl-, didecyl ester (9CI) (CA INDEX NAME)



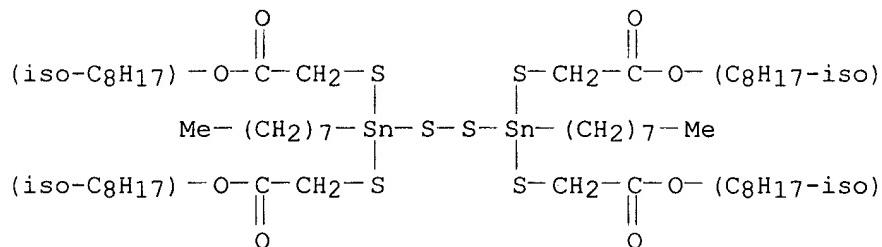
RN 55231-58-8 HCPLUS

CN 3,5,6,8-Tetrathia-4,7-distannadecanedioic acid, 4,4,7,7-tetramethyl-, didecyl ester (9CI) (CA INDEX NAME)



RN 56793-35-2 HCPLUS

CN 3,5,6,8-Tetrathia-4,7-distannadecanedioic acid, 4,7-bis[[2-(isoctyloxy)-2-oxoethyl]thio]-4,7-diethyl-, diisooctyl ester (9CI) (CA INDEX NAME)



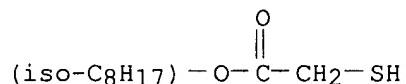
IT 25103-09-7

RL: RCT (Reactant)

(reaction of, with methyldtin trichloride and sodium disulfide)

RN 25103-09-7 HCPLUS

CN Acetic acid, mercapto-, isoctyl ester (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



L55 ANSWER 26 OF 38 HCAPLUS COPYRIGHT 2002 ACS

AN 1974:553789 HCAPLUS

DN 81:153789

TI Dimethyltin ester

IN Weisfeld, Lewis B.; Witman, Robert C.

PA Cincinnati Milacron Chemicals, Inc.

SO Ger. Offen., 46 pp.

CODEN: GWXXBX

DT Patent

LA German

IC C07F; C08G

CC 36-6 (Plastics Manufacture and Processing)

Section cross-reference(s): 29, 4

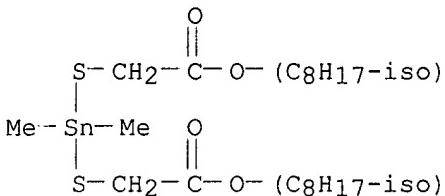
FAN.CNT 3

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
PI	DE 2329039	A1	19740704	DE 1973-2329039	19730607	
	US 3810868	A	19740514	US 1972-317228	19721221 <--	
	US 3887519	A	19750603	US 1974-435264	19740121 <--	
	US 3925309	A	19751209	US 1974-459372	19740409 <--	
PRAI	US 1972-317228		19721221			
	US 1971-177516		19710902			
	DE 1973-2329039		19730607			
	US 1974-435264		19740121			
AB	Dimethyltin dichloride (I) [753-73-1] contg. 5.0% Me ₃ SnCl impurity was heated with SnCl ₄ at 120.deg. to convert Me ₃ SnCl to I, and this I (0.5% Me ₃ SnCl content) was used to prep. dimethyltinbis(isooctyl thioglycolate) (II) [26636-01-1] and dimethyltinbis(isooctyl 3-mercaptopropionate) [42378-34-7] which were less toxic than similar but less pure tin compds. prep'd. from I contg. 5.0% Me ₃ SnCl. The prep'd. compds were useful as stabilizers for PVC [9002-86-2]. II was water-insol. Thus, II prep'd. from isooctyl thioglycolate [25103-09-7] and I contg. 0.5% Me ₃ SnCl (optionally after conversion of I to dimethyltin oxide [2273-45-2]) had LD ₅₀ 1020 mg/kg (rat), compared with 380 mg/kg for II prep'd. with I contg. 5% Me ₃ SnCl.					
ST	tin methyl isooctyloxycarbonylalkylthio toxicity; toxicity methyltin isooctyl thioglycolate; PVC methyltin isooctylthioglycolate toxicity; purifn methyltin chloride; heat stabilizer PVC; safety tin heat stabilizer					
IT	Heat stabilizers (dimethyltinbis(isooctyl thioalkanoates), nontoxic, for PVC)					
IT	Safety (of tin heat stabilizer)					
IT	Disproportionation (of trimethyltin chloride impurity in dimethyltin dichloride)					
IT	9002-86-2					
	RL: USES (Uses) (heat stabilizers for, dimethyltinbis(isooctyl thioalkanoates) as)					
IT	26636-01-1 42378-34-7					
	RL: MOA (Modifier or additive use); USES (Uses) (heat stabilizers, nontoxic, for PVC)					
IT	753-73-1P 2273-45-2P					
	RL: PUR (Purification or recovery); PREP (Preparation) (purifn. of, for manuf. of dimethyltinbis(isooctyl thioalkanoates) with low toxicity)					
IT	25103-09-7 30374-01-7					
	RL: RCT (Reactant) (reaction of, with dimethyltin chloride and oxide)					

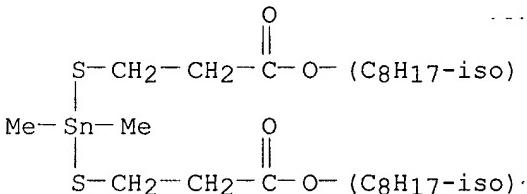
IT 26636-01-1 42378-34-7

RL: MOA (Modifier or additive use); USES (Uses)
(heat stabilizers, nontoxic, for PVC)

RN 26636-01-1 HCAPLUS

CN Acetic acid, 2,2'-(dimethylstannylene)bis(thio)bis-, diisooctyl ester
(9CI) (CA INDEX NAME)

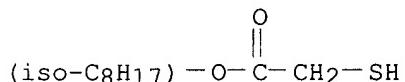
RN 42378-34-7 HCAPLUS

CN Propanoic acid, 3,3'-(dimethylstannylene)bis(thio)bis-, diisooctyl ester
(9CI) (CA INDEX NAME)

IT 25103-09-7 30374-01-7

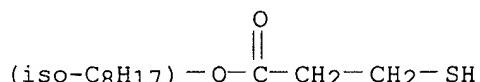
RL: RCT (Reactant)
(reaction of, with dimethyltin chloride and oxide)

RN 25103-09-7 HCAPLUS

CN Acetic acid, mercapto-, isoctyl ester (6CI, 7CI, 8CI, 9CI) (CA INDEX
NAME)

RN 30374-01-7 HCAPLUS

CN Propanoic acid, 3-mercaptop-, isoctyl ester (9CI) (CA INDEX NAME)



L55 ANSWER 27 OF 38 HCAPLUS COPYRIGHT 2002 ACS

AN 1974:506664 HCAPLUS

DN 81:106664

TI Stabilizers for vinyl chloride resins

IN Oakes, Vincent; Hutton, Ronald E.; Iles, Brian R.

PA Interstab Ltd.

SO Brit., 3 pp. Division of Brit. 1,326,057
 CODEN: BRXXAA

DT Patent DE 2149323

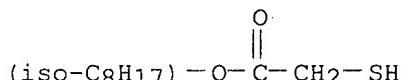
LA English

IC C08F

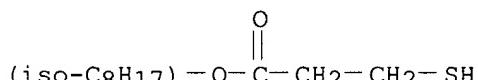
CC 36-6 (Plastics Manufacture and Processing)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	GB 1349913	A	19740410	GB 1972-8018	19701002
AB	Mixts. of a dialkyltin compd. and a thioglycolate had a synergic effect on each other in the heat and light stabilization of PVC [9002-86-2]. Thus, 0.05 in. thick sheet obtained from 100 wt. parts PVC mixed 5 min at 150.deg. with 1 wt. part lubricant and 2 wt. parts an equimolar mixt. of dibutyltin sulfide [4253-22-9] and ethylene glycol monothioglycolate [7380-58-7] took 60 min to become faint yellow at 185.deg. compared with 30 min for a compn. contg. only the Sn stabilizer.				
ST	heat stabilizer PVC; light stabilizer PVC; alkyltin thioglycolate stabilizer; tin alkyl stabilizer PVC				
IT	Heat stabilizers (dialkytin compds.-thioglycolates, for PVC)				
IT	Discoloration prevention (of PVC, by dialkytin compds.-thioglycolates)				
IT	7380-58-7	25103-09-7	30374-01-7		
	RL: MOA (Modifier or additive use); USES (Uses) (heat stabilizers, contg. dialkyltin compds., for PVC)				
IT	4253-22-9	26401-97-8			
	RL: MOA (Modifier or additive use); USES (Uses) (heat stabilizers, contg. thioglycolates, for PVC)				
IT	9002-86-2				
	RL: USES (Uses) (stabilizers for, dialkyltin compds.-thioglycolates as)				
IT	25103-09-7	30374-01-7			
	RL: MOA (Modifier or additive use); USES (Uses) (heat stabilizers, contg. dialkyltin compds., for PVC)				
RN	25103-09-7 HCPLUS				
CN	Acetic acid, mercapto-, isoctyl ester (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)				

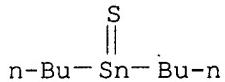


RN 30374-01-7 HCPLUS
 CN Propanoic acid, 3-mercaptopo-, isoctyl ester (9CI) (CA INDEX NAME)

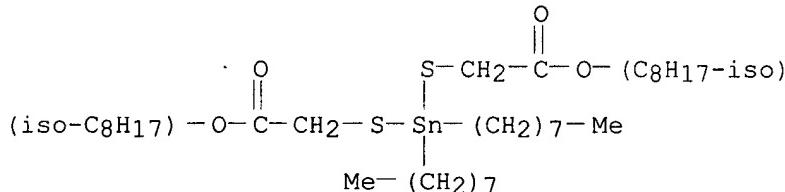


IT 4253-22-9 26401-97-8
 RL: MOA (Modifier or additive use); USES (Uses)
 (heat stabilizers, contg. thioglycolates, for PVC)

RN 4253-22-9 HCPLUS
 CN Stannane, dibutylthioxo- (8CI, 9CI) (CA INDEX NAME)



RN 26401-97-8 HCPLUS
 CN Acetic acid, 2,2'-(dioctylstannylene)bis(thio)bis-, diisooctyl ester
 (9CI) (CA INDEX NAME)



L55 ANSWER 28 OF 38 HCPLUS COPYRIGHT 2002 ACS
 AN 1974:121073 HCPLUS
 DN 80:121073
 TI Structure of organotin mercapto esters
 AU Stapfer, Christian H.; Herber, Rolfe H.
 CS Cincinnati Milacron Chem. Inc., Cincinnati, Ohio, USA
 SO J. Organometal. Chem. (1974), 66(3), 425-36
 CODEN: JORCAI
 DT Journal
 LA English
 CC 29-8 (Organometallic and Organometalloidal Compounds)
 Section cross-reference(s): 22
 AB The structural differences existing among organotin mercaptoesters RnSn S(CH₂)₁₋₂COOR'-%-n are reported. Infrared and Moessbauer spectroscopies revealed that thioglycolate and 3-mercaptopropionate esters adopt cyclic cis- or trans-trigonal bipyramidal as well as trans-octahedral configurations, depending on the compn. of the organotin compds. and their mode of prepn. Structural relationship among organotin mercaptides and thioacetates are also discussed.
 ST tin mercapto ester structure; Moessbauer mercapto ester tin; stannane carboxyalkylenethio
 IT Moessbauer effect
 (structure of organotin mercapto esters in relation to)
 IT 1185-81-5P 3644-27-7P 15481-49-9P
 26896-31-1P 31614-63-8P 50295-26-6P
 51287-84-4P 52165-03-4P 52282-41-4P
 52282-42-5P 52282-43-6P 52282-44-7P
 52282-45-8P 52282-46-9P 52282-47-0P
 52282-48-1P 52282-49-2P 52282-50-5P
 52282-51-6P 52282-52-7P 52282-53-8P
 52306-01-1P 52306-02-2P 52306-03-3P
 52306-04-4P 52306-05-5P 52340-38-2P
 52340-39-3P 52389-28-3P 52437-16-8P
 52437-17-9P 52437-52-2P 52795-25-2P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (prepn., ir and Moessbauer spectra of, structure of)
 IT 2365-48-2 7383-63-3
 RL: RCT (Reactant)

Not reverse

(reaction with dichlorodialkylstannanes)

IT 25103-09-7
 RL: RCT (Reactant)
 (reaction with dichlorostannanes)

IT 753-73-1 1118-46-3
 RL: RCT (Reactant)
 (reaction with mercapto carboxylates)

IT 683-18-1 1135-99-5
 RL: RCT (Reactant)
 (reaction with mercaptocarboxylates)

IT 56-35-9
 RL: RCT (Reactant)
 (reaction with mercaptocarboxylic esters)

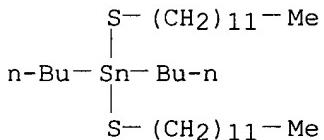
IT 993-16-8
 RL: RCT (Reactant)
 (reaction with thioglycoates)

IT 100-53-8 112-55-0 30374-01-7
 RL: RCT (Reactant)
 (reaction with tin compds.)

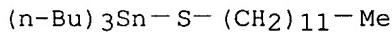
IT 1185-81-5P 3644-27-7P 15481-49-9P
 26896-31-1P 31614-63-8P 50295-26-6P
 51287-84-4P 52165-03-4P 52282-41-4P
 52282-42-5P 52282-43-6P 52282-44-7P
 52282-45-8P 52282-46-9P 52282-47-0P
 52282-48-1P 52282-49-2P 52282-50-5P
 52282-51-6P 52282-52-7P 52282-53-8P
 52306-01-1P 52306-02-2P 52306-03-3P
 52306-04-4P 52306-05-5P 52340-38-2P
 52340-39-3P 52389-28-3P 52437-16-8P
 52437-17-9P 52437-52-2P 52795-25-2P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (prepn., ir and Moessbauer spectra of, structure of)

RN 1185-81-5 HCPLUS

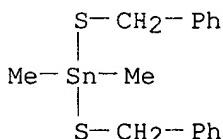
CN Stannane, dibutylbis(dodecylthio)- (8CI, 9CI) (CA INDEX NAME)



RN 3644-27-7 HCPLUS
 CN Stannane, tributyl(dodecylthio)- (8CI, 9CI) (CA INDEX NAME)

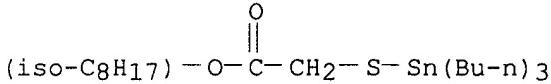


RN 15481-49-9 HCPLUS
 CN Stannane, dimethylbis[(phenylmethyl)thio]- (9CI) (CA INDEX NAME)



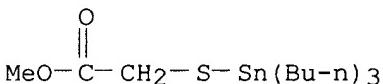
RN 26896-31-1 HCAPLUS

CN Acetic acid, [(tributylstannyl)thio]-, isoctyl ester (8CI, 9CI) (CA INDEX NAME)



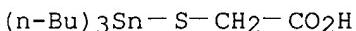
RN 31614-63-8 HCAPLUS

CN Acetic acid, [(tributylstannyl)thio]-, methyl ester (8CI, 9CI) (CA INDEX NAME)



RN 50295-26-6 HCAPLUS

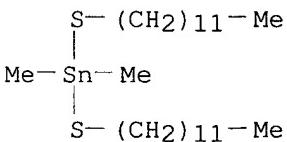
CN Acetic acid, [(tributylstannyl)thio]-, sodium salt (9CI) (CA INDEX NAME)



● Na

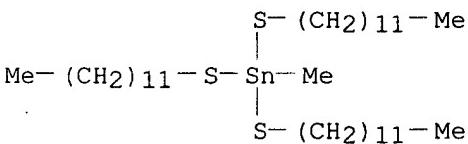
RN 51287-84-4 HCAPLUS

CN Stannane, bis(dodecylthio)dimethyl- (9CI) (CA INDEX NAME)



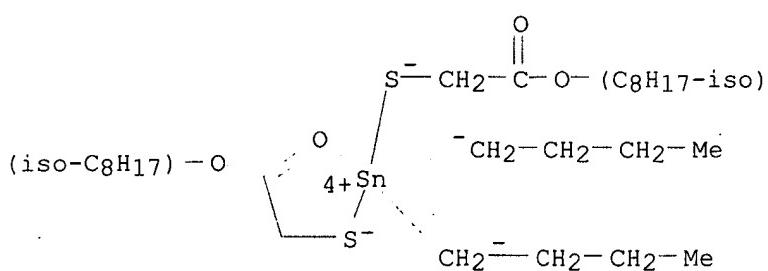
RN 52165-03-4 HCAPLUS

CN Stannane, tris(dodecylthio)methyl- (9CI) (CA INDEX NAME)



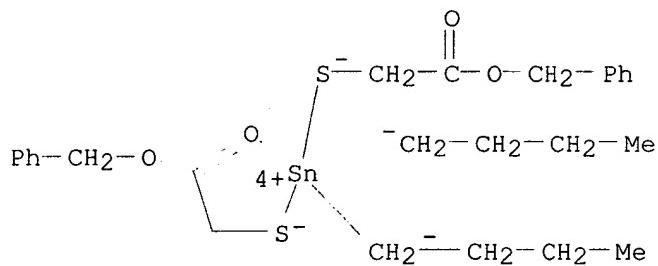
RN 52282-41-4 HCAPLUS

CN Tin, dibutyl(isooctyl mercaptoacetato-O',S)(isooctyl mercaptoacetato-S)- (9CI) (CA INDEX NAME)



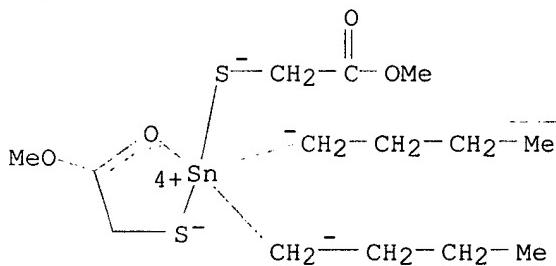
RN 52282-42-5 HCPLUS

CN Tin, dibutyl(phenylmethyl-mercaptopropionate-O',S)(phenylmethyl-mercaptopropionate-S)- (9CI) (CA INDEX NAME)



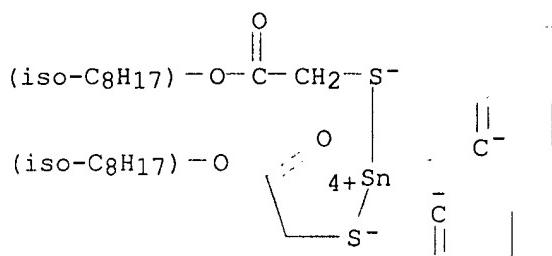
RN 52282-43-6 HCPLUS

CN Tin, dibutyl(methyl mercaptopropionate-O',S)(methyl mercaptopropionate-S)-, (TB-5-33)- (9CI) (CA INDEX NAME)

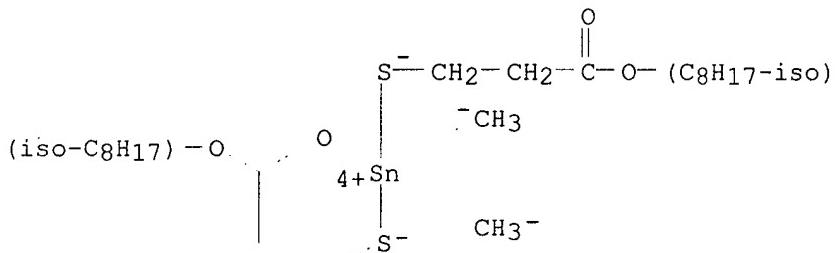


RN 52282-44-7 HCPLUS

CN Tin, (isooctyl mercaptopropionate-O',S)(isooctyl mercaptopropionate-S)diphenyl- (9CI) (CA INDEX NAME)

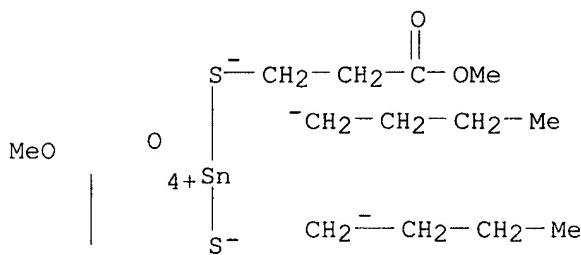


RN 52282-45-8 HCAPLUS

CN Tin, (isooctyl mercaptoacetato-O',S)(isooctyl mercaptoacetato-S)dimethyl-
(9CI) (CA INDEX NAME)

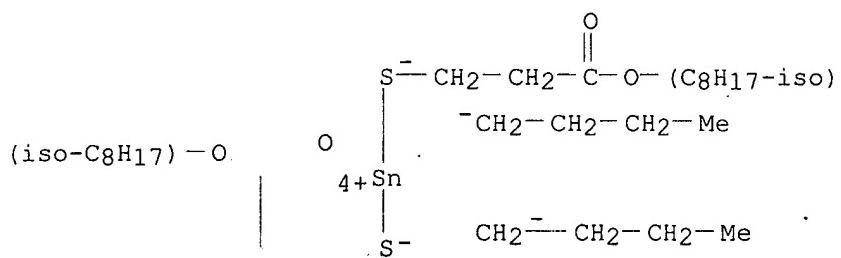
RN 52282-46-9 HCAPLUS

CN Tin, dibutyl(methyl 3-mercaptopropanoato-O',S)(methyl 3-mercaptopropanoato-S)- (9CI) (CA INDEX NAME)



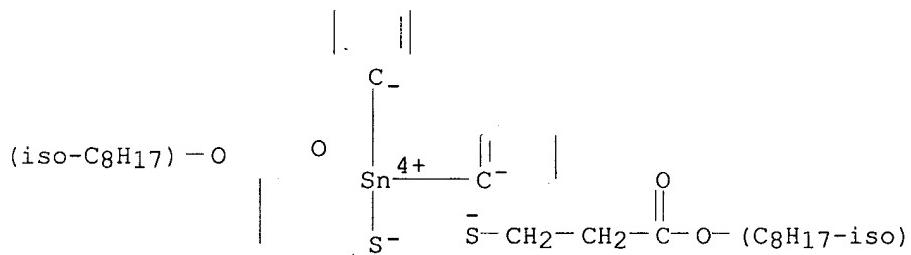
RN 52282-47-0 HCAPLUS

CN Tin, dibutyl(isooctyl 3-mercaptopropanoato-O',S)(isooctyl 3-mercaptopropanoato-S)-, (TB-5-33)- (9CI) (CA INDEX NAME)



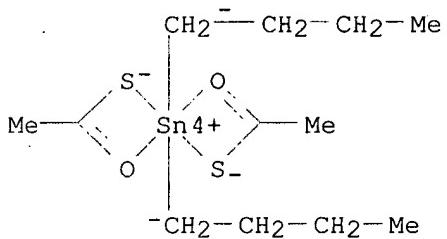
RN 52282-48-1 HCAPLUS

CN Tin, (isoctyl 3-mercaptopropanoato-O',S)(isoctyl 3-mercaptopropanoato-S)diphenyl- (9CI) (CA INDEX NAME)



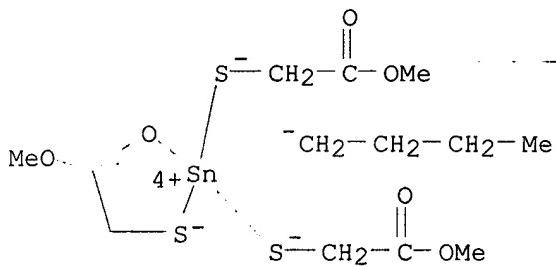
RN 52282-49-2 HCAPLUS

CN Tin, dibutylbis(ethanethioato-O,S)- (9CI) (CA INDEX NAME)



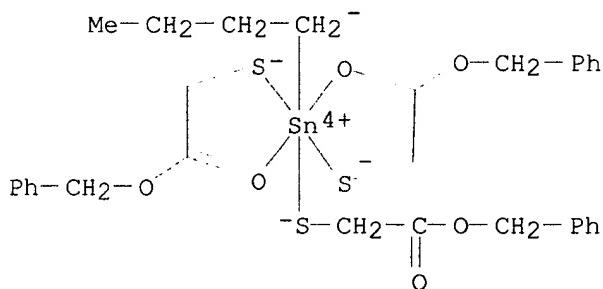
RN 52282-50-5 HCAPLUS

CN Tin, butyl(methyl mercaptoacetato-O',S)bis(methyl mercaptoacetato-S)-(9CI) (CA INDEX NAME)



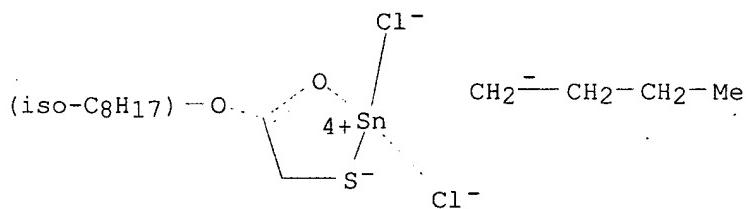
RN 52282-51-6 HCPLUS

CN Tin, butylbis(phenylmethyl mercaptoacetato-O',S)(phenylmethyl mercaptoacetato-S)- (9CI) (CA INDEX NAME)



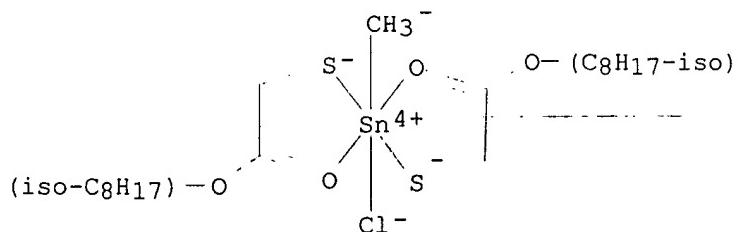
RN 52282-52-7 HCPLUS

CN Tin, butyldichloro(isooctyl mercaptoacetato-O',S)- (9CI) (CA INDEX NAME)

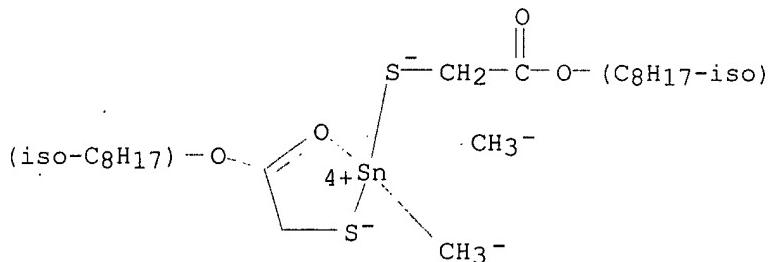


RN 52282-53-8 HCPLUS

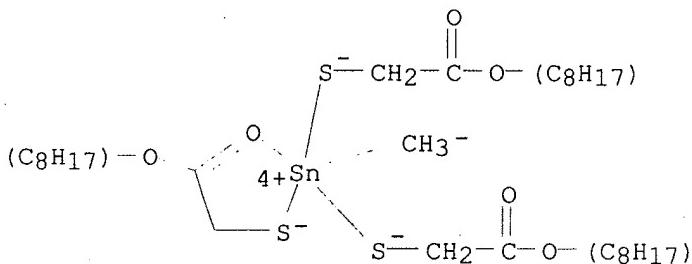
CN Tin, chlorobis(isooctyl mercaptoacetato-O',S)methyl- (9CI) (CA INDEX NAME)



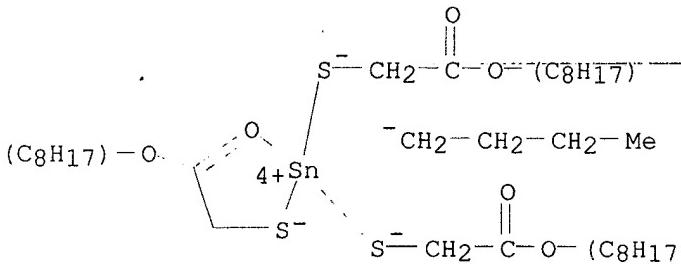
RN 52306-01-1 HCPLUS

CN Tin, (isooctyl mercaptoacetato-O',S)(isooctyl mercaptoacetato-S)dimethyl-,
(TB-5-33)- (9CI) (CA INDEX NAME)

RN 52306-02-2 HCPLUS

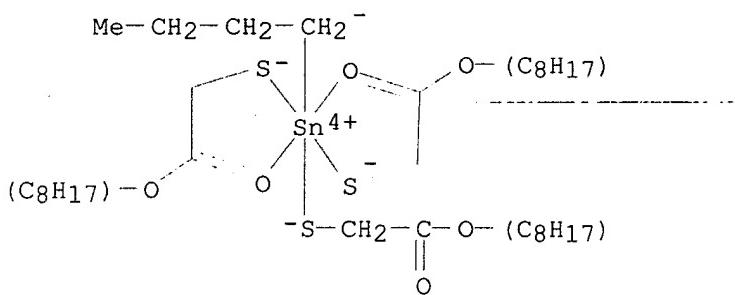
CN Tin, (isooctyl mercaptoacetato-O',S)bis(isooctyl mercaptoacetato-S)methyl-,
(TB-5-22)- (9CI) (CA INDEX NAME)

RN 52306-03-3 HCPLUS

CN Tin, butyl(isooctyl mercaptoacetato-O',S)bis(isooctyl mercaptoacetato-S)-
(9CI) (CA INDEX NAME)

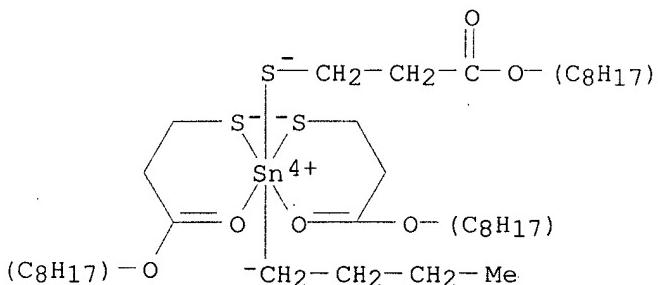
RN 52306-04-4 HCPLUS

CN Tin, butylbis(isooctyl mercaptoacetato-O',S)(isooctyl mercaptoacetato-S)-
(9CI) (CA INDEX NAME)



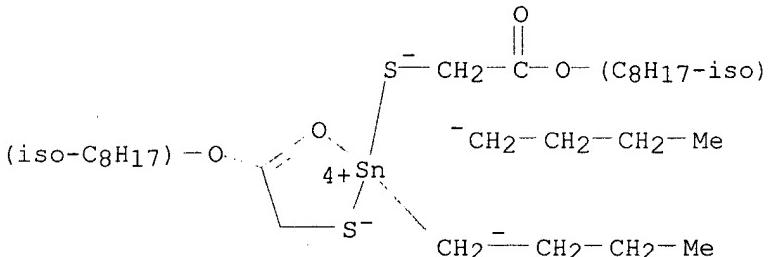
RN 52306-05-5 HCPLUS

CN Tin, butylbis(isooctyl 3-mercaptopropanoato-O',S)(isooctyl 3-mercaptopropanoato-S)- (9CI) (CA INDEX NAME)



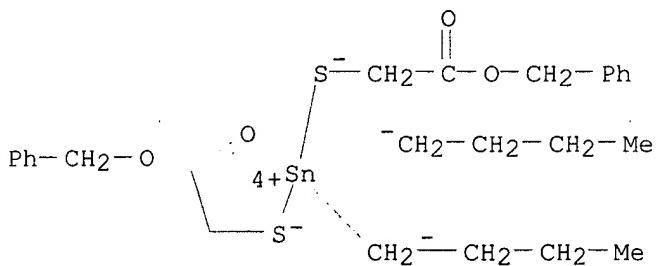
RN 52340-38-2 HCPLUS

CN Tin, dibutyl(isooctyl mercaptoacetato-O',S)(isooctyl mercaptoacetato-S)-, (TB-5-33)- (9CI) (CA INDEX NAME)

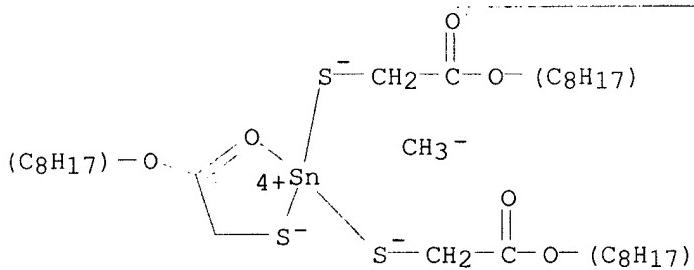


RN 52340-39-3 HCPLUS

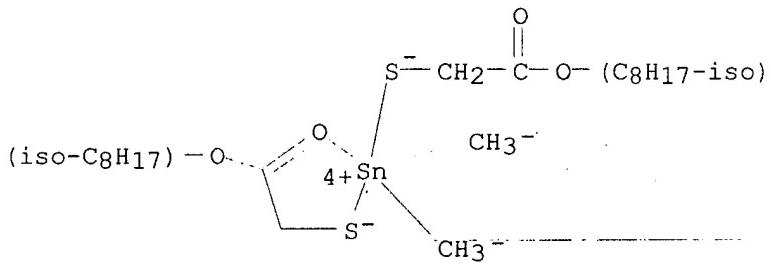
CN Tin, dibutyl(phenylmethyl mercaptoacetato-O',S)(phenylmethyl mercaptoacetato-S)-, (TB-5-33)- (9CI) (CA INDEX NAME)



RN 52389-28-3 HCAPLUS

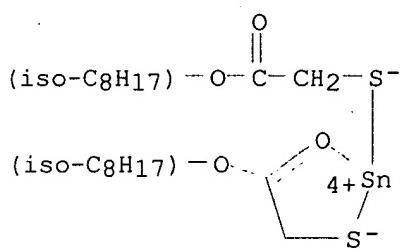
CN Tin, (isooctyl mercaptoacetato-O',S)bis(isooctyl mercaptoacetato-S)methyl-
(9CI) (CA INDEX NAME)

RN 52437-16-8 HCAPLUS

CN Tin, (isooctyl mercaptoacetato-O',S)(isooctyl mercaptoacetato-S)dimethyl-,
(TB-5-12)- (9CI) (CA INDEX NAME)

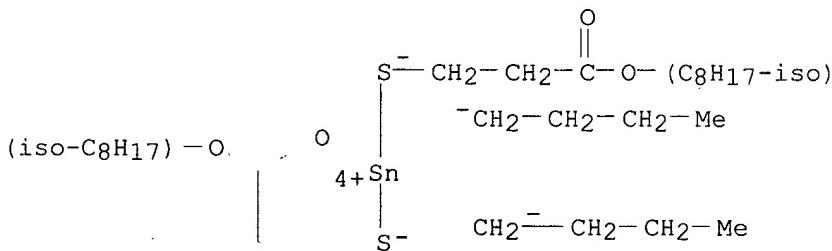
RN 52437-17-9 HCAPLUS

CN Tin, (isooctyl mercaptoacetato-O',S)(isooctyl mercaptoacetato-S)diphenyl-,
(TB-5-44)- (9CI) (CA INDEX NAME)



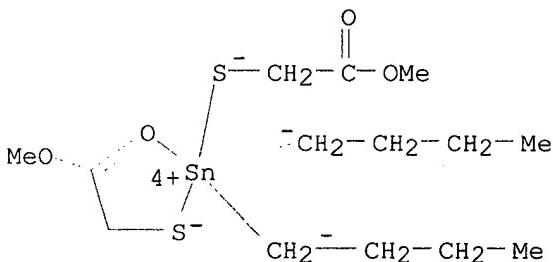
RN 52437-52-2 HCPLUS

CN Tin, dibutyl(isooctyl 3-mercaptopropanoato-O',S) (isooctyl 3-mercaptopropanoato-S)- (9CI) (CA INDEX NAME)



RN 52795-25-2 HCPLUS

CN Tin, dibutyl(methyl mercaptoacetato-O',S) (methyl mercaptoacetato-S)- (9CI) (CA INDEX NAME)

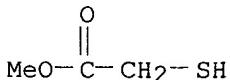


IT 2365-48-2

RL: RCT (Reactant)
(reaction with dichlorodialkylstannanes)

RN 2365-48-2 HCPLUS

CN Acetic acid, mercapto-, methyl ester (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

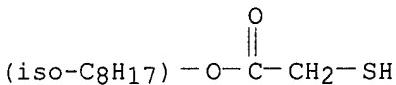


IT 25103-09-7

RL: RCT (Reactant)
 (reaction with dichlorostannanes)

RN 25103-09-7 HCPLUS

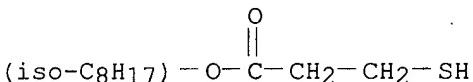
CN Acetic acid, mercapto-, isoctyl ester (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



IT 30374-01-7
 RL: RCT (Reactant)
 (reaction with tin compds.)

RN 30374-01-7 HCPLUS

CN Propanoic acid, 3-mercaptop-, isoctyl ester (9CI) (CA INDEX NAME)



L55 ANSWER 29 OF 38 HCPLUS COPYRIGHT 2002 ACS
 AN 1974:27903 HCPLUS
 DN 80:27903
 TI Tin stabilizer mixtures for PVC
 IN Oakes, Vincent; Hutton, Ronald E.; Iles, Brian R.
 PA AKZO G.m.b.H.
 SO Ger. Offen., 26 pp.
 CODEN: GWXXBX
 DT Patent
 LA German
 IC C08F; C08K
 CC 36-6 (Plastics Manufacture and Processing)
 Section cross-reference(s): 29

Not reverse

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI DE 2307360	A1	19730830	DE 1973-2307360	19730215
JP 48089953	A2	19731124	JP 1973-18828	19730215
PRAI GB 1972-7058		19720216		

AB Stabilizer mixts. for poly(vinyl chloride) [9002-86-2] contained a (di)alkyltin sulfide and a compd. such as monoocetyltris(isooctyl thioglycolate) [26401-86-5] or dibutyltin dilaurate (I) [77-58-7]. The mixts. were optionally prep'd. by simultaneous reaction of (di)alkyltin chloride mixts. with esters in aq. NaOH contg. Na2S. Thus, films from PVC 100, fatty alc. lubricant 1, I 1.0, and dibutyltin sulfide (II) [4253-22-9] 1.0 part turned light yellow or black on heating in air of 185.deg. for 50 or 100 min, resp., vs. 20 or 70 min, resp., for films contg. 2.0 parts I and no II.

ST PVC heat stabilizer; tin compd PVC stabilizer; sulfide
 tin PVC stabilizer

IT Heat stabilizers
 (alkyltin sulfide-alkyltin carboxylate mixts., for PVC)

IT 9002-86-2
 RL: USES (Uses)
 (heat stabilizers for, (di)alkyltin sulfide-(di)alkyltin carboxylate

mixts. as)

IT 77-58-7 1185-81-5 3572-47-2 4253-22-9
 10039-33-5 13269-74-4 15666-29-2 25168-21-2
 25168-24-5 25852-70-4 26401-86-5
 26401-97-8 33397-79-4 36432-42-5 50716-92-2
 50788-67-5
 RL: MOA (Modifier or additive use); USES (Uses)
 (heat stabilizers, for PVC)

IT 1344-08-7
 RL: RCT (Reactant)
 (reaction of, with alkyltin chlorides and alkyl thioglycolate or maleate)

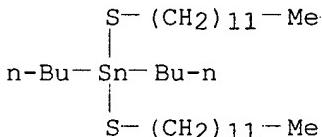
IT 7423-42-9 25103-09-7
 RL: RCT (Reactant)
 (reaction of, with alkyltin chlorides and sodium sulfide)

IT 3542-36-7 29440-63-9
 RL: RCT (Reactant)
 (reaction of, with ethylhexyl maleate and sodium sulfide)

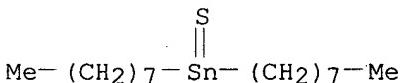
IT 683-18-1 1118-46-3
 RL: RCT (Reactant)
 (reaction of, with isoctyl thioglycolate and sodium sulfide)

IT 1185-81-5 3572-47-2 4253-22-9
 13269-74-4 15666-29-2 25168-24-5
 25852-70-4 26401-86-5 26401-97-8
 33397-79-4 36432-42-5 50788-67-5
 RL: MOA (Modifier or additive use); USES (Uses)
 (heat stabilizers, for PVC)

RN 1185-81-5 HCPLUS
 CN Stannane, dibutylbis(dodecylthio)- (8CI, 9CI) (CA INDEX NAME)



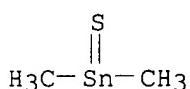
RN 3572-47-2 HCPLUS
 CN Stannane, dioctylthioxo- (8CI, 9CI) (CA INDEX NAME)



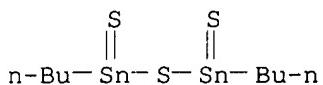
RN 4253-22-9 HCPLUS
 CN Stannane, dibutylthioxo- (8CI, 9CI) (CA INDEX NAME)



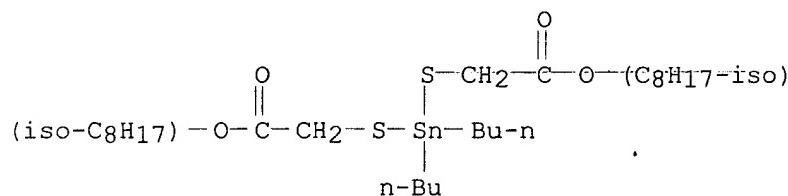
RN 13269-74-4 HCPLUS
 CN Stannane, dimethylthioxo- (8CI, 9CI) (CA INDEX NAME)



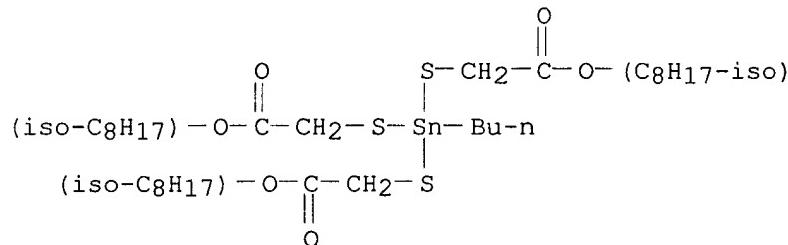
RN 15666-29-2 HCPLUS
 CN Distannathiane, dibutylidithioxo- (9CI) (CA INDEX NAME)



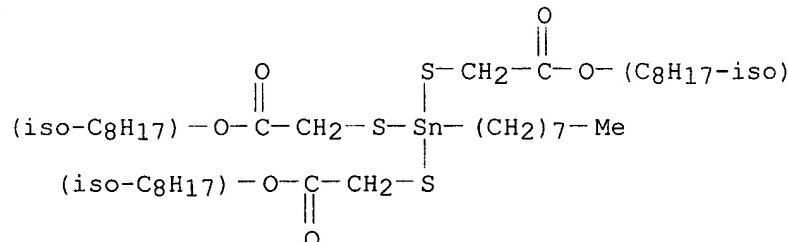
RN 25168-24-5 HCPLUS
 CN Acetic acid, 2,2'-(dibutylstannylene)bis(thio)bis-, diisooctyl ester
 (9CI) (CA INDEX NAME)



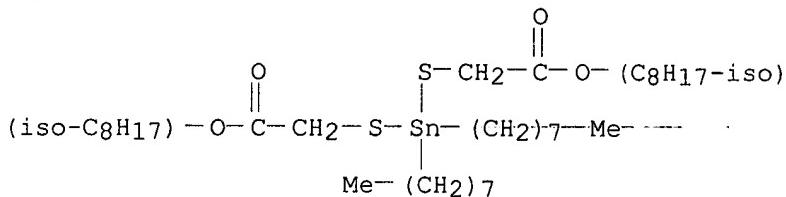
RN 25852-70-4 HCPLUS
 CN Acetic acid, 2,2',2'''-(butylstannylidyne)tris(thio)tris-, triisooctyl ester (9CI) (CA INDEX NAME)



RN 26401-86-5 HCPLUS
 CN Acetic acid, 2,2',2'''-(octylstannylidyne)tris(thio)tris-, triisooctyl ester (9CI) (CA INDEX NAME)

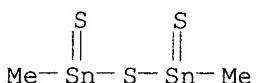


RN 26401-97-8 HCAPLUS

CN Acetic acid, 2,2'-(dioctylstannylene)bis(thio)bis-, diisooctyl ester
(9CI) (CA INDEX NAME)

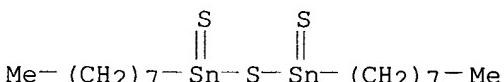
RN 33397-79-4 HCAPLUS

CN Distannathiane, dimethyldithioxo- (9CI) (CA INDEX NAME)

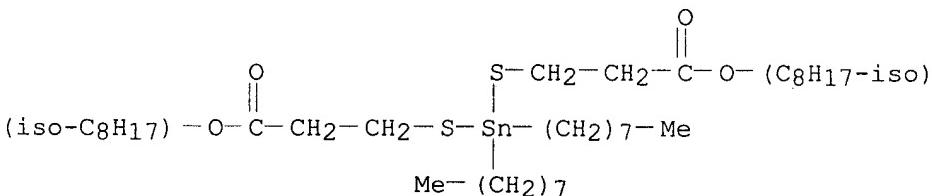


RN 36432-42-5 HCAPLUS

CN Distannathiane, dioctyldithioxo- (9CI) (CA INDEX NAME)



RN 50788-67-5 HCAPLUS

CN Propanoic acid, 3,3'-(dioctylstannylene)bis(thio)bis-, diisooctyl ester
(9CI) (CA INDEX NAME)

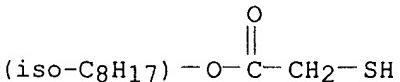
IT 25103-09-7

RL: RCT (Reactant)

(reaction of, with alkyltin chlorides and sodium sulfide)

RN 25103-09-7 HCAPLUS

CN Acetic acid, mercapto-, isoctyl ester (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



L55 ANSWER 30 OF 38 HCAPLUS COPYRIGHT 2002 ACS
 AN 1974:15890 HCAPLUS
 DN 80:15890
 TI Organotin mercapto acid ester, stabilizer for poly(vinyl chloride) resins
 IN Ludwig, Jerome H.
 PA Dart Industries Inc.
 SO Ger. Offen., 33 pp.
 CODEN: GWXXBX
 DT Patent
 LA German
 IC C07F; C08F
 CC 36-6 (Plastics Manufacture and Processing)
 Section cross-reference(s): 29

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 2209336	A1	19730906	DE 1972-2209336	19720223
	DE 2209336	B2	19800925		
	DE 2209336	C3	19840301		

AB The title compds., useful as heat stabilizers for PVC [9002-86-2] are prep'd. continuously and in high purity by reaction of R₂SnO with alkyl mercaptoalkanoates in a heat exchanger. Thus, addn. of a mixt. of 62.25 g dibutyltin-oxide-[818-08-6] and 105.34 g isoctyl mercaptoacetate [25103-09-7] at 4 ml/min to a zone heated at 150.deg. gives diisoctyl [(dibutylstannylene)dithio]diacetate (I) [25168-24-5], impurity content 0.058%, flash point (ASTM D 92-66) 218.deg., compared with 1.88% and 171.deg., resp., for conventionally prep'd. I. *Not unique*

ST heat stabilizer PVC; tin alkoxide reaction; mercaptoalkanoate alkyl reaction; acetate mercapto reaction; oxide alkyltin reaction

IT Condensation reaction
 (of dialkyltin oxides with alkyl mercaptoacetates, process for continuous)

IT 9002-86-2

RL: USES (Uses)
 (heat stabilizers for, manuf. of)

IT 20004-12-0 25074-09-3 25168-24-5
 26401-97-8 50938-38-0

RL: MOA (Modifier or additive use); USES (Uses)
 (heat stabilizers, for PVC, continuous process for manuf. of)

IT 818-08-6 870-08-6

RL: RCT (Reactant)
 (reaction of, with dialkyl mercaptoacetates, process for continuous)

IT 623-51-8 3746-39-2 25103-09-7

RL: RCT (Reactant)
 (reaction of, with dialkyltin oxides, process for continuous)

IT 68-11-1, reactions

RL: RCT (Reactant)
 (with dialkyltin oxides, process for continuous)

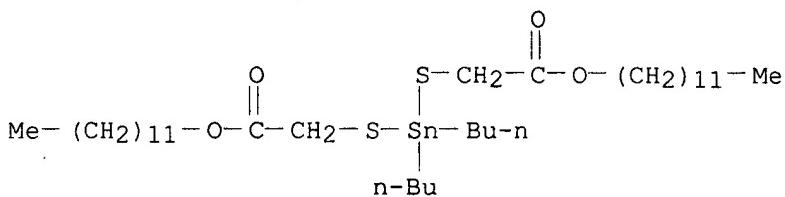
IT 20004-12-0 25074-09-3 25168-24-5

26401-97-8 50938-38-0

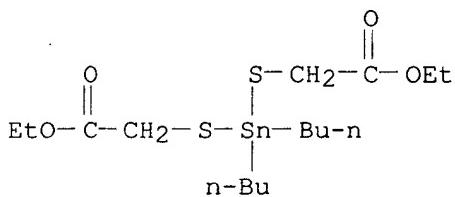
RL: MOA (Modifier or additive use); USES (Uses)
 (heat stabilizers, for PVC, continuous process for manuf. of)

RN 20004-12-0 HCAPLUS

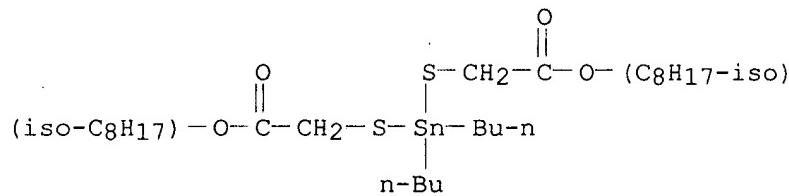
CN 8-Oxa-3,5-dithia-4-stannaecicosanoic acid, 4,4-dibutyl-7-oxo-, dodecyl ester (9CI) (CA INDEX NAME)



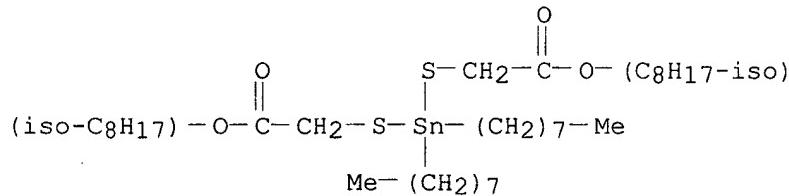
RN 25074-09-3 HCPLUS

CN 8-Oxa-3,5-dithia-4-stannadecanoic-acid, 4,4-dibutyl-7-oxo-, ethyl ester
(9CI) (CA INDEX NAME)

RN 25168-24-5 HCPLUS

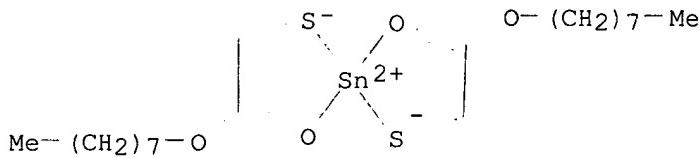
CN Acetic acid, 2,2'-(dibutylstannylene)bis(thio)]bis-, diisooctyl ester
(9CI) (CA INDEX NAME)

RN 26401-97-8 HCPLUS

CN Acetic acid, 2,2'-(dioctylstannylene)bis(thio)]bis-, diisooctyl ester
(9CI) (CA INDEX NAME)

RN 50938-38-0 HCPLUS

CN Tin, bis(octyl mercaptoacetato-O',S)-, (T-4)- (9CI) (CA INDEX NAME)



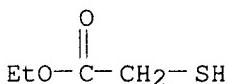
IT 623-51-8 3746-39-2 25103-09-7

RL: RCT (Reactant)

(reaction of, with dialkyltin oxides, process for continuous)

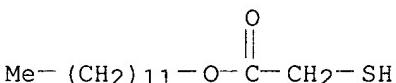
RN 623-51-8 HCAPLUS

CN Acetic acid, mercapto-, ethyl ester (7CI, 8CI, 9CI) (CA INDEX NAME)



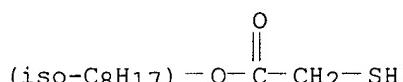
RN 3746-39-2 HCAPLUS

CN Acetic acid, mercapto-, dodecyl ester (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



RN 25103-09-7 HCAPLUS

CN Acetic acid, mercapto-, isoctyl ester (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



L55 ANSWER 31 OF 38 HCAPLUS COPYRIGHT 2002 ACS

AN 1973:505823 HCAPLUS

DN 79:105823

TI Organotin compounds for stabilizing polymers

IN Coates, Harold; Collins, John Desmond; Siddiqui, Iftikhar Hussain

PA Albright and Wilson Ltd.

SO Ger. Offen., 49 pp.

CODEN: GWXXBX

DT Patent

LA German

IC C07F; C08K; C08F

CC 36-2 (Plastics Manufacture and Processing)

Section cross-reference(s): 29

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 2256613	A1	19730524	DE 1972-2256613	19721117
	GB 1415492	A	19751126	GB 1971-53892	19721116

ES 408765	A1	19760601	ES 1972-408765	19721118
BE 791628	A1	19730316	BE 1972-124369	19721120
NL 7215667	A	19730522	NL 1972-15667	19721120
FR 2160680	A1	19730629	FR 1972-41189	19721120
FR 2160680	B1	19771230		
JP 48062845	A2	19730901	JP 1972-115739	19721120
AU 7249034	A1	19740523	AU 1972-49034	19721120
AT 320669	B	19750225	AT 1972-9866	19721120
US 4020090	A	19770426	US 1974-525119	19741119 <--
PRAI GB 1971-53892		19711119		
US 1972-308018		19721120		

AB The title stabilizers (25 prep'd., 12 tested), e.g. I, R = di-Bu or dioctyl, which contained S and which were used to stabilize PVC [9002-86-2], were prep'd. by reaction of dibutyltin oxide or dioctyltin oxide with certain aldehydes or ketones and with a mixt. of certain mercaptans and (or) mercapto acids. The resulting compn. could also be further treated with one of the compds. HO₂CCH:CHCOSCH₂CO₂Q, HS(CH₂)_nCO₂Q, and HO₂CCH:CHCO₂Q, Q = alkyl, cycloalkyl, aryl. Thus, a mixt. of .beta.-mercaptopropionic acid 0.2, lauryl thioglycolate 0.2, dodecyl aldehyde 0.2, and dibutyltin oxide 0.1 mole was mixed with 0.1 g p-toluenesulfonic acid and 3.6 ml. water and the total mixt. was refluxed to give light yellow compd. (I, R = Bu) [41376-60-7] contg. 9.4% Sn. A molding prepared from C D 55/9 [9002-86-2] 100, Plastilube 30 1 and prepared stabilizer 2 parts had Gardner color value 1 after heating at 190.deg. for 10 mins compared with 2 for a sample similarly prepared by using Mellite 31 [dibutyltin bis(isooctyl thioglycolate)] as the stabilizer.

ST tin organo stabilizer PVC; thioglycolate stabilizer PVC ; mercaptopropionate stabilizer PVC; aldehyde dodecyl PVC stabilizer

IT 818-08-6 870-08-6

RL: RCT (Reactant)
(reaction of, with aldehydes and mercapto derivs.)

IT 4265-54-7

RL: RCT (Reactant)
(reaction of, with cetylalc. and dioctyltin oxide)

IT 36653-82-4

RL: RCT (Reactant)
(reaction of, with cyclohexylidene by mercaptoacetic acid and dioctyltin oxide)

IT 112-54-9 3746-39-2

RL: RCT (Reactant)
(reaction of, with dialkyltin oxide and mercaptopropionic acid)

IT 107-96-0

RL: RCT (Reactant)
(reaction of, with dialkyltin oxide and thioglycolates)

IT 141-97-9 30137-97-4 50674-15-2 50674-16-3 50674-17-4

RL: RCT (Reactant)
(reaction of, with dibutyltin oxide and mercapto derivs.)

IT 50828-60-9 50828-61-0

RL: RCT (Reactant)
(reaction of, with dibutyltin oxide and octyl maleate)

IT 25103-09-7 30374-01-7

RL: RCT (Reactant)
(reaction of, with dibutyltin oxide and salicylaldehyde)

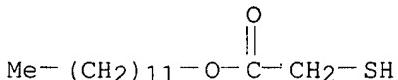
IT 50674-14-1

RL: RCT (Reactant)
(reaction of, with dioctyltin oxide and hydroxybenzaldehyde derivs.)

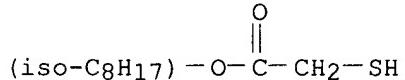
IT 50828-68-7 50828-69-8

RL: RCT (Reactant)

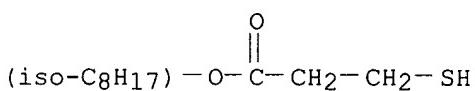
(reaction of, with dioctyltin oxide and mercaptan derivs.)
IT 20292-00-6
RL: RCT (Reactant)
(reaction of, with dioctyltin oxide and mercapto derivs.)
IT 112-55-0 31335-29-2
RL: RCT (Reactant)
(reaction of, with dioctyltin oxide and salicylaldehyde)
IT 3746-40-5
RL: RCT (Reactant)
(reaction of, with maleic anhydride)
IT 9002-86-2
RL: USES (Uses)
(stabilizers for, organotin compds. as)
IT 41376-60-7 50674-07-2 50674-08-3
50674-09-4 50674-10-7 50674-11-8
50674-12-9 50674-13-0 50828-62-1
50828-63-2 50828-64-3 50828-65-4
50828-66-5 50828-67-6 50828-70-1
50828-71-2 50828-72-3 50828-73-4
50828-74-5 50828-75-6 50828-76-7
50928-96-6
RL: MOA (Modifier or additive use); USES (Uses)
(stabilizers, for PVC)
IT 90-02-8, reactions
RL: RCT (Reactant)
(with dibutyltin oxide and alkyl mercaptopropionates)
IT 108-31-6, reactions
RL: RCT (Reactant)
(with nonyl thioglycolate)
IT 3746-39-2
RL: RCT (Reactant)
(reaction of, with dialkyltin oxide and mercaptopropionic acid)
RN 3746-39-2 HCPLUS
CN Acetic acid, mercapto-, dodecyl ester (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



IT 25103-09-7 30374-01-7
RL: RCT (Reactant)
(reaction of, with dibutyltin oxide and salicylaldehyde)
RN 25103-09-7 HCPLUS
CN Acetic acid, mercapto-, isoctyl ester (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



RN 30374-01-7 HCPLUS
CN Propanoic acid, 3-mercaptop-, isoctyl ester (9CI) (CA INDEX NAME)

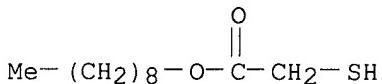


IT 3746-40-5

RL: RCT (Reactant)
(reaction of, with maleic anhydride)

RN 3746-40-5 HCPLUS

CN Acetic acid, mercapto-, nonyl ester (7CI, 8CI, 9CI) (CA INDEX NAME)



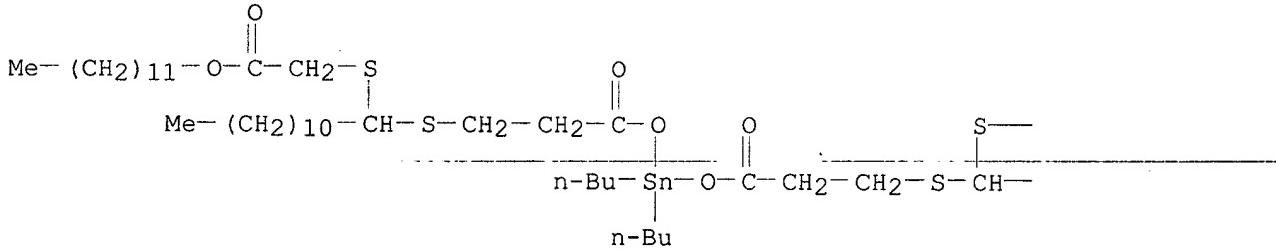
IT 41376-60-7 50674-07-2 50674-08-3
 50674-09-4 50674-10-7 50674-11-8
 50674-12-9 50674-13-0 50828-62-1
 50828-63-2 50828-64-3 50828-65-4
 50828-66-5 50828-67-6 50828-70-1
 50828-71-2 50828-72-3 50828-73-4
 50828-74-5 50828-75-6 50828-76-7
50928-96-6

RL: MOA (Modifier or additive use); USES (Uses)
(stabilizers, for PVC)

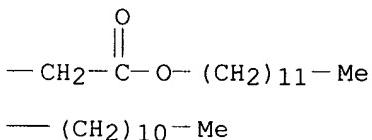
RN 41376-60-7 HCPLUS

CN 13,22,24,33-Tetraoxa-16,18,28,30-tetrathia-23-stannapentatetracontane,
23,23-dibutyl-14,21,25,32-tetraoxo-17,2a-diundecyl- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B

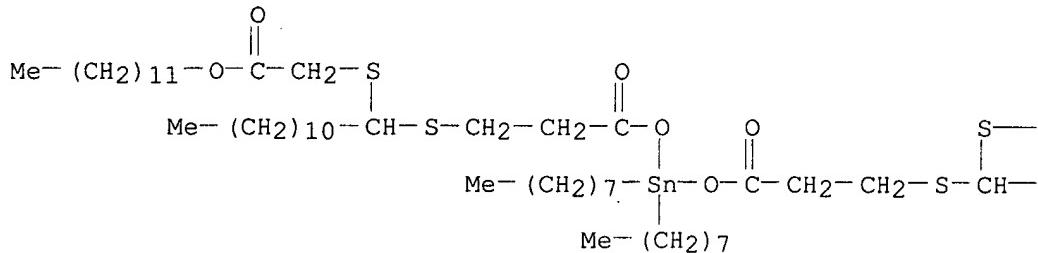


RN 50674-07-2 HCPLUS

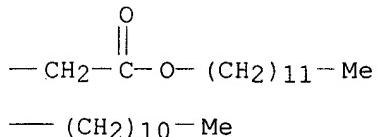
CN 9,11-Dioxa-3,5,15,17-tetrathia-10-stannanonadecanedioic acid,
10,10-dioctyl-8,12-dioxo-4,16-diundecyl-, didodecyl ester (9CI) (CA INDEX)

NAME)

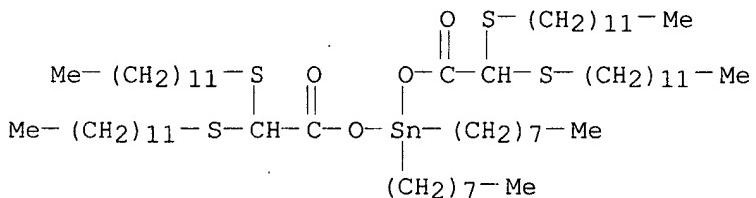
PAGE 1-A



PAGE 1-B

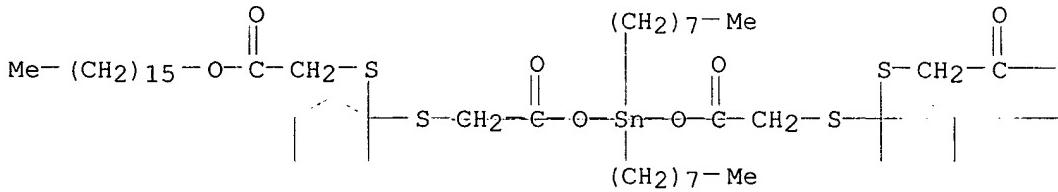


RN 50674-08-3 HCPLUS
 CN 15,17-Dioxa-12,20-dithia-16-stannadotriacontane, 13,19-bis(dodecylthio)-16,16-dioctyl-14,18-dioxo- (9CI) (CA INDEX NAME)



RN 50674-09-4 HCPLUS
 CN Acetic acid, 2,2'-(dioctylstannylene)bis[oxy(2-oxo-2,1-ethanediyl)thiocyclohexylidenethio]bis-, dihexadecyl ester (9CI) (CA INDEX NAME)

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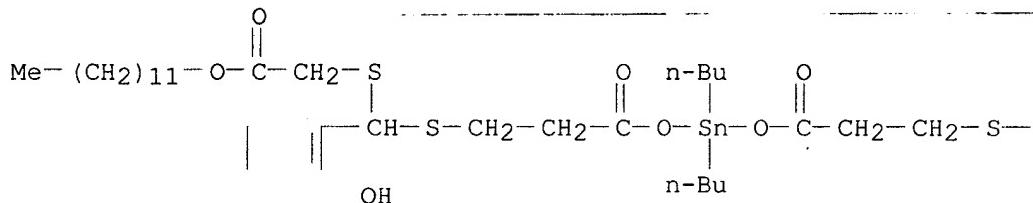


PAGE 1-B

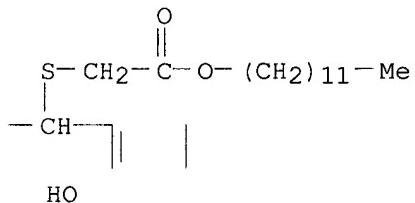
$$-\text{O}-\text{(CH}_2\text{)}_{15}\text{-Me}$$

RN 50674-10-7 HCPLUS
CN 9,11-Dioxa-3,5,15,17-tetrathia-10-stannanonadecanedioic acid,
10,10-dibutyl-4,16-bis(2-hydroxyphenyl)-8,12-dioxo-, didodecyl ester (9CI)
(CA INDEX NAME)

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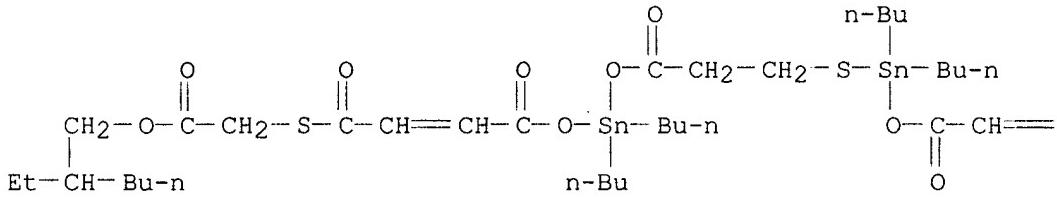


PAGE 1-B

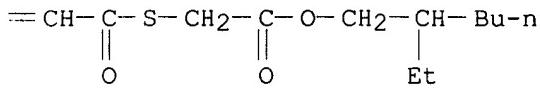


RN: 50674-11-8 HCAPLUS
CN: 8,10,16-Trioxa-3,14,21-trithia-9,15-distannatricosa-5,18-dienedioic acid,
9,9,15,15-tetrabutyl-4,7,11,17,20-pentaoxo-, bis(2-ethylhexyl) ester (9CI)
(CA INDEX NAME)

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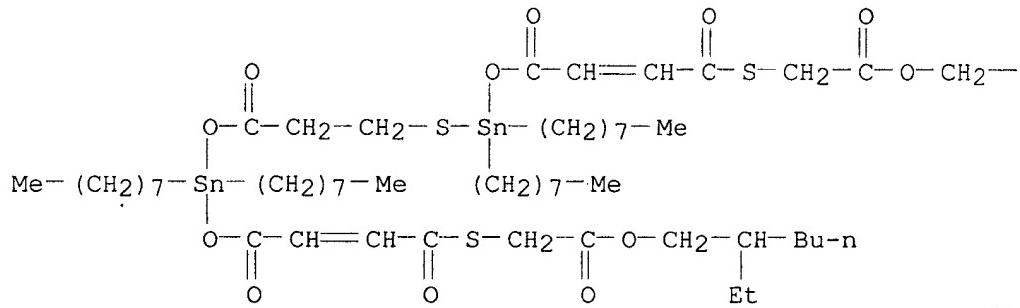
PAGE 1-B



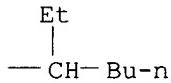
RN 50674-12-9 HCPLUS

CN 8,10,16-Trioxa-3,14,21-trithia-9,15-distannatricosa-5,18-dienedioic acid,
9,9,15,15-tetraoctyl-4,7,11,17,20-pentaoxo-, bis(2-ethylhexyl) ester (9CI)
(CA INDEX NAME)

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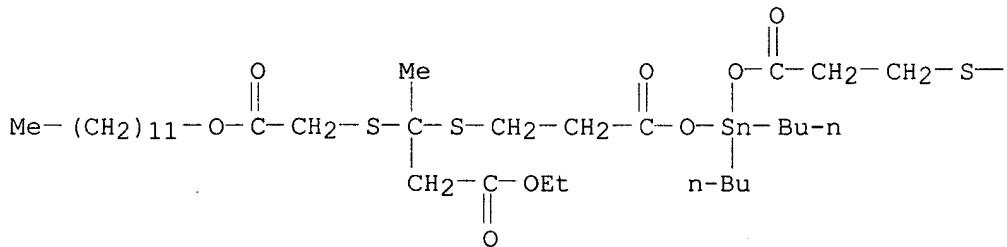
PAGE 1-B



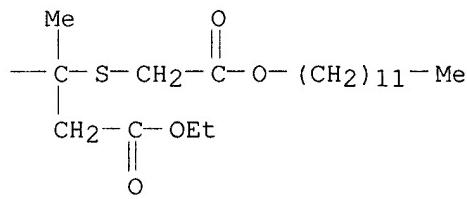
RN 50674-13-0 HCPLUS

CN 9,11-Dioxa-3,5,15,17-tetrathia-10-stannanonadecanedioic acid,
10,10-dibutyl-4,16-bis(2-ethoxy-2-oxoethyl)-4,16-dimethyl-8,12-dioxo-,
didodecyl ester (9CI) (CA INDEX NAME)

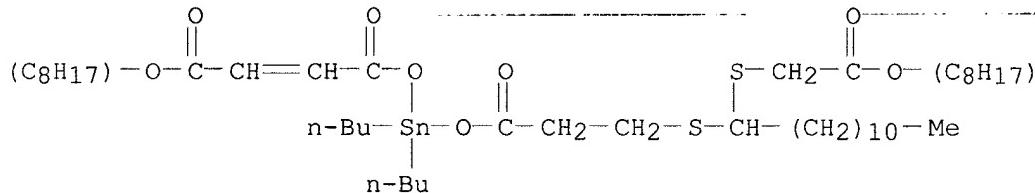
PAGE 1-A



PAGE 1-B



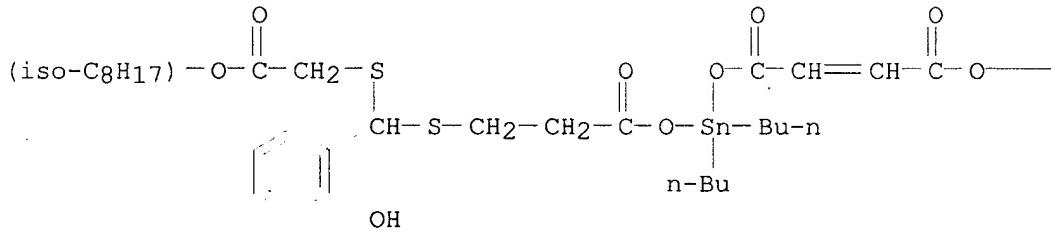
RN 50828-62-1 HCPLUS

CN 9,11-Dioxa-3,5-dithia-10-stannapentadec-13-enedioic acid,
10,10-dibutyl-8,12-dioxo-4-undecyl-, diisooctyl ester, (Z)- (9CI) (CA
INDEX NAME)

RN 50828-63-2 HCPLUS

CN 9,11-Dioxa-3,5-dithia-10-stannapentadec-13-enedioic acid,
10,10-dibutyl-4-(2-hydroxyphenyl)-8,12-dioxo-, diisooctyl ester, (Z)-
(9CI) (CA INDEX NAME)

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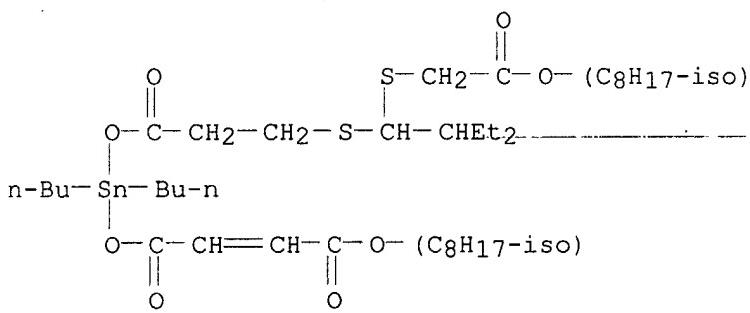


PAGE 1-B

- (C₈H₁₇-iso)

RN 50828-64-3 HCPLUS

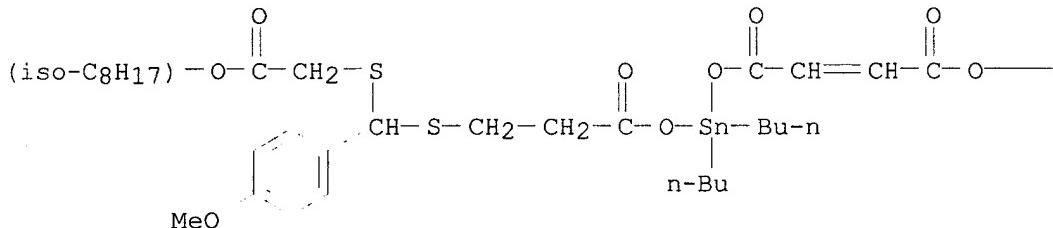
CN 9,11-Dioxa-3,5-dithia-10-stannapentadec-13-enedioic acid,
10,10-dibutyl-4-(1-ethylpropyl)-8,12-dioxo-, diisooctyl ester, (Z)- (9CI)
(CA INDEX NAME)



RN 50828-65-4 HCAPLUS

CN 9,11-Dioxa-3,5-dithia-10-stannapentadec-13-enedioic acid,
10,10-dibutyl-4-(4-methoxyphenyl)-8,12-dioxo-, diisooctyl ester, (Z)-
(9CI) (CA INDEX NAME)

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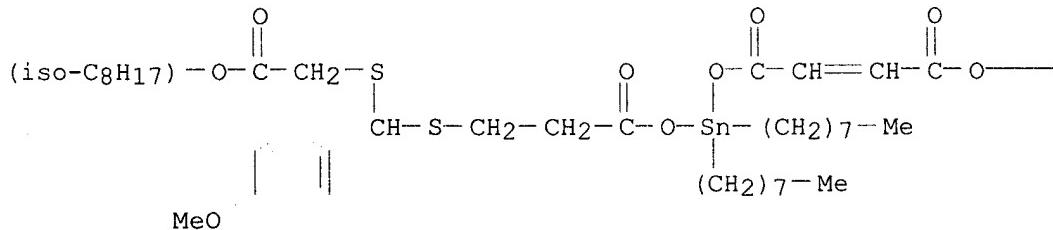
PAGE 1-B

— (C₈H₁₇-iso)

RN 50828-66-5 HCAPLUS

CN 9,11-Dioxa-3,5-dithia-10-stannapentadec-13-enedioic acid,
4-(4-methoxyphenyl)-10,10-diethyl-8,12-dioxo-, diisooctyl ester, (Z)-
(9CI) (CA INDEX NAME)

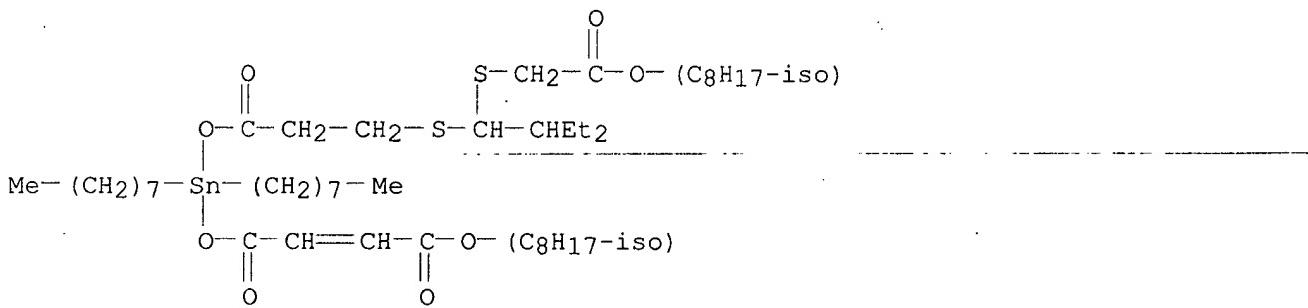
PAGE 1-A



PAGE 1-B

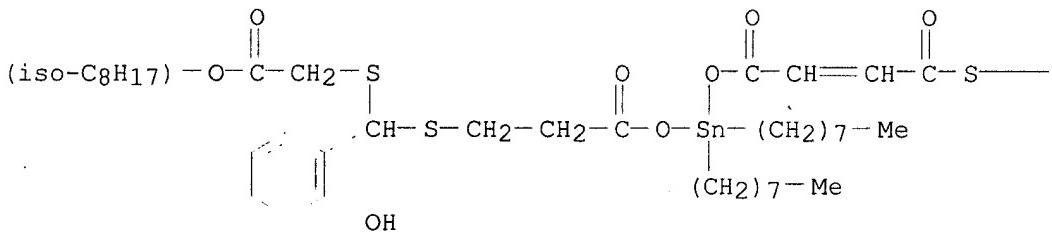
— (C₈H₁₇-iso)

RN 50828-67-6 HCAPLUS
 CN 9,11-Dioxa-3,5-dithia-10-stannapentadec-13-enedioic acid,
 4-(1-ethylpropyl)-10,10-dioctyl-8,12-dioxo-, diisoctyl ester, (Z)- (9CI)
 (CA INDEX NAME)

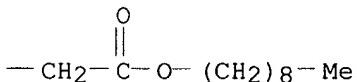


RN 50828-70-1 HCAPLUS
 CN 9,11-Dioxa-3,5,16-trithia-10-stannaoctadec-13-enedioic acid,
 4-(2-hydroxyphenyl)-10,10-dioctyl-8,12,15-trioxo-, 1-isoctyl 18-nonyl
 ester, (Z)- (9CI) (CA INDEX NAME)

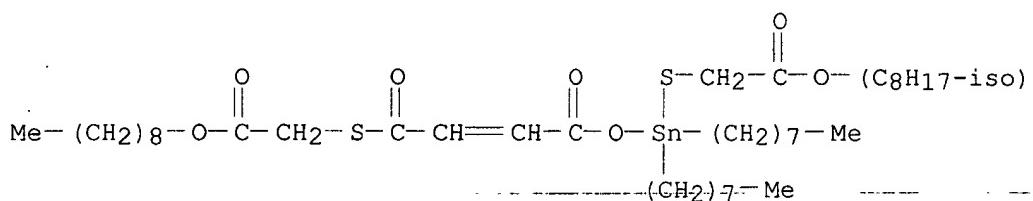
PAGE 1-A



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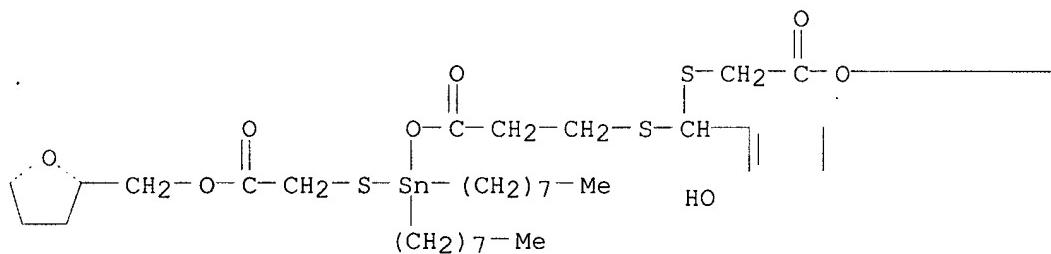
RN 50828-71-2 HCAPLUS
 CN 5-Oxa-3,10-dithia-4-stannadodec-7-enedioic acid, 4,4-dioctyl-6,9-dioxo-,
 1-isoctyl 12-nonyl ester, (Z)- (9CI) (CA INDEX NAME)



RN 50828-72-3 HCAPLUS

CN 5-Oxa-3,9,11-trithia-4-stannatridecanedioic acid, 10-(2-hydroxyphenyl)-4,4-dioctyl-6-oxo-, 13-isooctyl 1-[(tetrahydro-2-furanyl)methyl] ester (9CI) (CA INDEX NAME)

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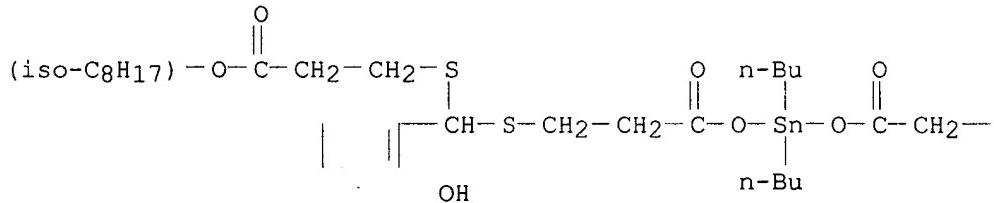
PAGE 1-B

— (C₈H₁₇-iso)

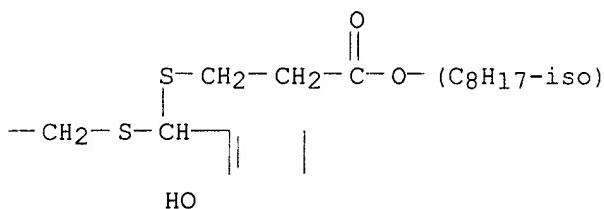
RN 50828-73-4 HCAPLUS

CN 10,12-Dioxa-4,6,16,18-tetrathia-11-stannaheneicosanedioic acid,
11,11-dibutyl-15,17-bis(2-hydroxyphenyl)-9,13-dioxo-, diisoctyl ester
(9CI) (CA INDEX NAME)

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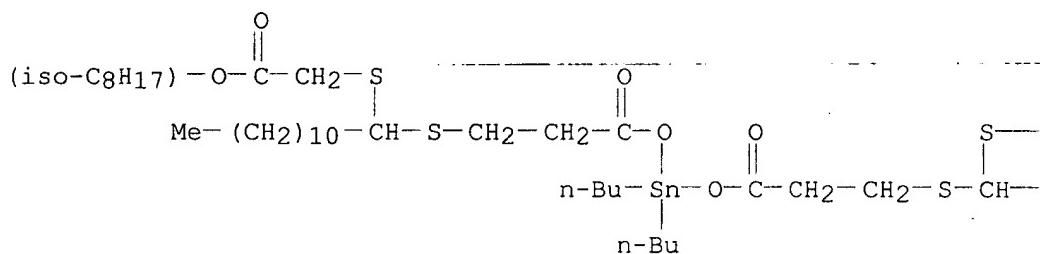
PAGE 1-B



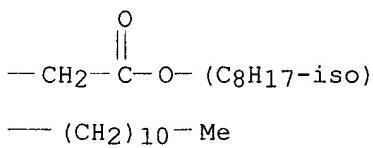
RN 50828-74-5 HCPLUS

CN 9,11-Dioxa-3,5,15,17-tetrathia-10-stannanonadecanedioic acid,
10,10-dibutyl-8,12-dioxo-4,16-diundecyl-, diisooctyl ester (9CI) (CA
INDEX NAME)

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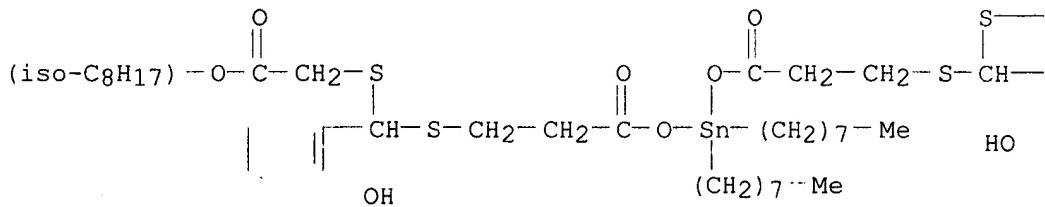
PAGE 1-B



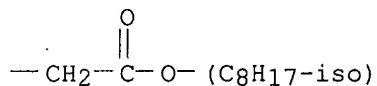
RN 50828-75-6 HCPLUS

CN 9,11-Dioxa-3,5,15,17-tetrathia-10-stannanonadecanedioic acid,
4,16-bis(2-hydroxyphenyl)-10,10-dioctyl-8,12-dioxo-, diisooctyl ester
(9CI) (CA INDEX NAME)

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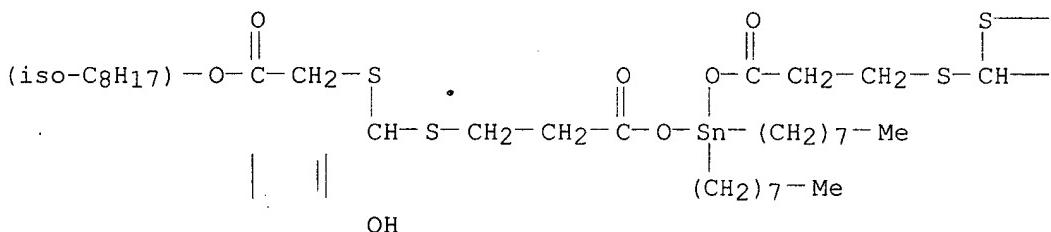


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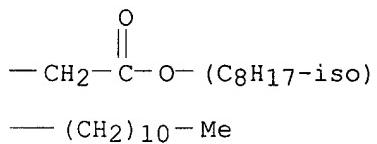


RN 50828-76-7 HCAPLUS
 CN 9,11-Dioxa-3,5,15,17-tetrathia-10-stannanonadecanedioic acid,
 4-(2-hydroxyphenyl)-10,10-diethyl-8,12-dioxo-16-undecyl-, diisooctyl ester
 (9CI) (CA INDEX NAME)

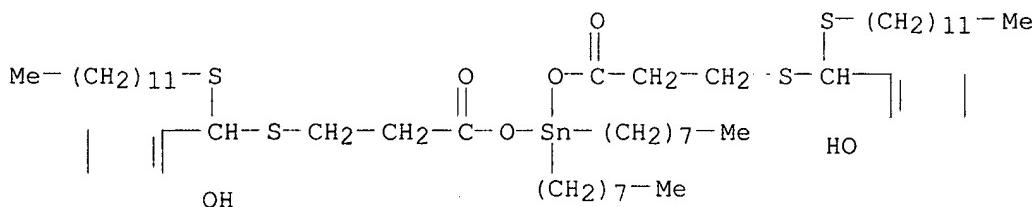
PAGE 1-A



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RN 50928-96-6 HCAPLUS
 CN Phenol, 2,2'-[1,13-bis(dodecylthio)-7,7-diethyl-5,9-dioxo-6,8-dioxa-2,12-dithia-7-stannatridecane-1,13-diyl]bis- (9CI) (CA INDEX NAME)

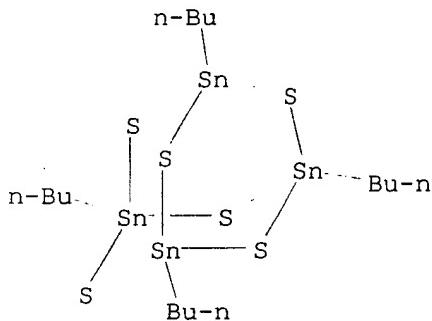


L55 ANSWER 32 OF 38 HCAPLUS COPYRIGHT 2002 ACS
 AN 1973:96169 HCAPLUS
 DN 78:96169

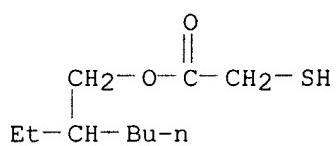
KATHLEEN FULLER EIC 1700/LAW LIBRARY 308-4290

TI New results on the migration of organotin stabilizers in food
AU Woggon, H.; Uhde, W. J.; Saeuberlich, H.
CS Zentralinst. Ernaehr., Akad. Wiss., Potsdam-Rehbruecke, E. Ger.
SO Ernaehrungsforschung (1972), 16(4), 645-55
CODEN: ERNFA7
DT Journal
LA German
CC 17-2 (Foods)
AB The migration of di-n-octyltin esters, monobutylthiostannic acid and monobutyltin esters (poly(vinyl chloride) stabilizers) in aq. and fatty foods was studied. The di-n-octyltin esters migrate unchanged, whereas for the others, mainly decompn. products were found. The migration of the toxic decompn. product 2-ethylhexyl thioglycolate was very low.
ST PVC stabilizer food; tin alkyl plastic food; alkyltin plastic food
IT Packaging materials
(for food, poly(vinyl chloride) tin stabilizers migration from)
IT Food
(packaging material for, poly(vinyl chloride) tin stabilizers migration from)
IT 1118-46-3 6588-41-6 7659-86-1 15571-58-1
39315-56-5 40933-07-1 40968-77-2
RL: BIOL (Biological study)
(poly(vinyl chloride) stabilizer, migration into food)
IT 9002-86-2
RL: BIOL (Biological study)
(tin stabilizers for, food migration of)
IT 6588-41-6 7659-86-1 15571-58-1
39315-56-5 40933-07-1 40968-77-2
RL: BIOL (Biological study)
(poly(vinyl chloride) stabilizer, migration into food)
RN 6588-41-6 HCPLUS
CN 2,4,6,8,9,10-Hexathia-1,3,5,7-tetrastannatricyclo[3.3.1.13,7]decane,
1,3,5,7-tetrabutyl- (9CI) (CA INDEX NAME)

Not review

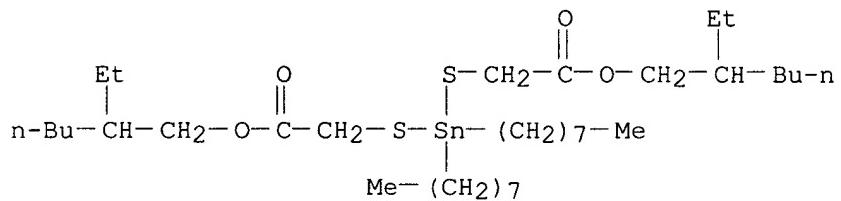


RN 7659-86-1 HCPLUS
CN Acetic acid, mercapto-, 2-ethylhexyl ester (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



RN 15571-58-1 HCAPLUS

CN 8-Oxa-3,5-dithia-4-stannatetradecanoic acid, 10-ethyl-4,4-dioctyl-7-oxo-, 2-ethylhexyl ester (9CI) (CA INDEX NAME)



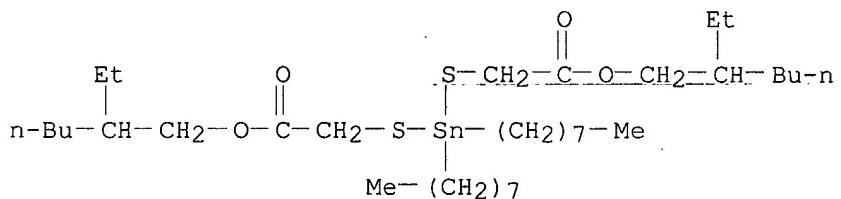
RN 39315-56-5 HCAPLUS

CN 5,7,12-Trioxa-6-stannaoctadeca-2,9-dienoic acid, 14-ethyl-6,6-dioctyl-4,8,11-trioxo-, 2-ethylhexyl ester, mixt. with 2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (9CI) (CA INDEX NAME)

CM 1

CRN 15571-58-1

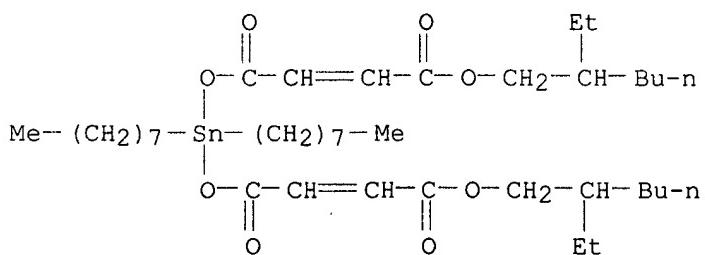
CMF C36 H72 O4 S2 Sn



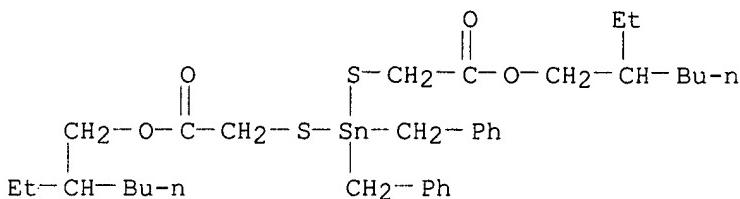
CM 2

CRN 10039-33-5

CMF C40 H72 O8 Sn



RN 40933-07-1 HCAPLUS

CN Acetic acid, 2,2'-[bis(phenylmethyl)stannylenebis(thio)]bis-,
bis(2-ethylhexyl) ester (9CI) (CA INDEX NAME)

RN 40968-77-2 HCAPLUS

L55 ANSWER 33 OF 38 HCAPLUS COPYRIGHT 2002 ACS

AN 1972:435707 HCAPLUS

DN 77:35707

TI Stabilization of poly(vinyl chloride)

IN Oakes, Vincent; Hutton, Ronald E.; Iles, Brian R.

PA Interstab Ltd.

SO Ger. Offen., 10 pp.

CODEN: GWXXBX

DT Patent

LA German

IC C08F

CC 36-6 (Plastics Manufacture and Processing)

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI DE 2149323 19720406

PRAI GB 1970-46923 19701002

AB Poly(vinyl chloride) (I) [9002-86-2] was stabilized against decompn. by heat and light by addn. of mixts. contg. dibutyltin sulfide (II) [4253-22-9] and (or) dioctyltin sulfide [3572-47-2], and maleates, e.g. methyl hydrogen maleate (III) [3052-50-4], or thioglycolates, e.g. isoctyl thioglycolate [25103-09-7], or isoctyl .beta.-mercaptopropionate [30374-01-7]. Thus, I 100, ester plasticizer 1, and stabilizer mixt. 2 parts (1% II and 1% III, based on I) were homogenized at 155.deg. and extruded to give films of 1.27 mm thickness. Colorless film samples on heating in air at 185.deg. turned bright yellow within 60 min, as compared with 30 min for II-free samples and 20 min for III-free samples.

ST alkyltin sulfide heat stabilizer; maleate heat stabilizer; thioglycolate heat stabilizer; mercaptopropionate heat stabilizer; heat stabilizer PVC; light stabilizer PVC; tin sulfide heat stabilizer

IT Heat stabilizers

Light stabilizers

(tin mercaptides-maleic acid esters, for PVC)

IT 621-13-6 2424-62-6 2915-53-9 3052-50-4 3572-47-2

4253-22-9 7423-42-9 25103-09-7 25168-24-5

27309-95-1 30374-01-7 37265-25-1 37265-42-2 38463-87-5

RL: MOA (Modifier or additive use); USES (Uses)

(heat stabilizers, for PVC)

IT 9002-86-2

RL: USES (Uses)

(heat- and light-stabilizers for, tin mercaptides and maleic acid esters as)

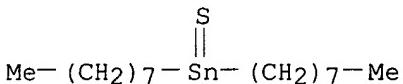
IT 3572-47-2 4253-22-9 25103-09-7

25168-24-5 30374-01-7

RL: MOA (Modifier or additive use); USES (Uses)
(heat stabilizers, for PVC)

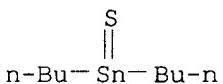
RN 3572-47-2 HCAPLUS

CN Stannane, dioctylthioxo- (8CI, 9CI) (CA INDEX NAME)



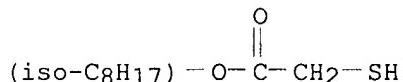
RN 4253-22-9 HCAPLUS

CN Stannane, dibutylthioxo- (8CI, 9CI) (CA INDEX NAME)

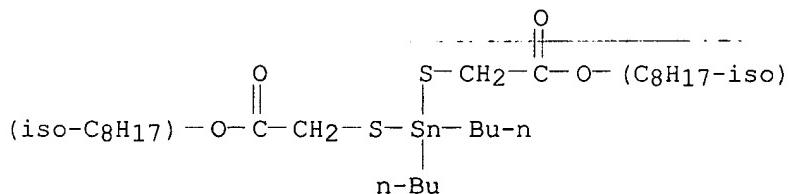


RN 25103-09-7 HCAPLUS

CN Acetic acid, mercapto-, isoctyl ester (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

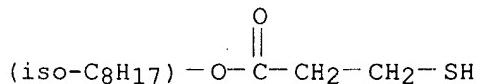


RN 25168-24-5 HCAPLUS

CN Acetic acid, 2,2'-(dibutylstannylene)bis(thio)bis-, diisooctyl ester
(9CI) (CA INDEX NAME)

RN 30374-01-7 HCAPLUS

CN Propanoic acid, 3-mercaptopropanoate, isoctyl ester (9CI) (CA INDEX NAME)



L55 ANSWER 34 OF 38 HCAPLUS COPYRIGHT 2002 ACS

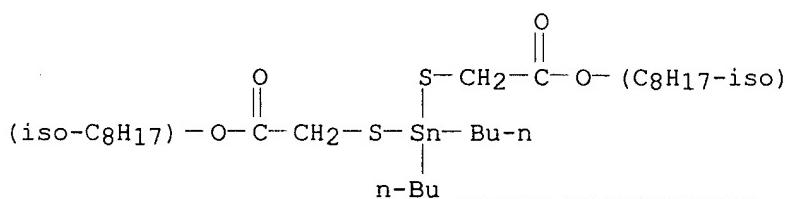
AN 1972:141858 HCAPLUS

DN 76:141858

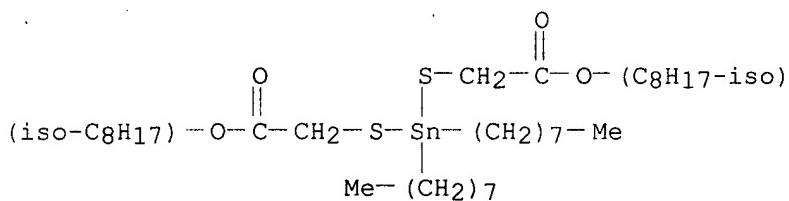
TI Organotin compounds as primary stabilizers for halogen-containing resins

IN Wilkins, Anthony J.; Hoye, Peter A. T.
 PA Albright and Wilson Ltd.
 SO Brit., 5 pp.
 CODEN: BRXXAA
 DT Patent
 LA English
 IC C07F; C08F
 CC 36 (Plastics Manufacture and Processing)
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	GB 1263476		19720209	GB 1968-32690	19690709
AB	Synergistic 2 part stabilizer compns. comprise diorganotin S,S'-bis(mercaptopcarboxylate) and 5-50% (based on the 1st stabilizer) diorganotin S,O-mercaptopcarboxylate. Thus, dibutyltin S,S'-bis(isooctylglycolate) (I) [25168-24-5] 1.5 and dibutyltin S,O-thioglycolate (II) [78-20-6] 0.5 were milled in poly(vinyl chloride) [9002-86-2] 100 parts. When aged in air 200.deg. the colorless product began to turn brown within 20-5 min, while a PVC mixed with 20 parts I turned yellow in <5 min, and a 2:100 II-PVC mixt. was pale brown before aging.				
ST	organotin mercaptocarboxylate PVC stabilizer; tin mercaptocarboxylate PVC stabilizer				
IT	9002-86-2 RL: USES (Uses) (synergistic stabilizer compns. for, diorganotin S,S'-bis(mercaptopcarboxylate)-diorganotin S,O-mercaptopcarboxylate as)				
IT	870-08-6 25168-24-5 26401-97-8 RL: USES (Uses) (synergistic stabilizer compns. from diorganotin S,O-mercaptopcarboxylates and, for poly(vinyl chloride))				
IT	68-11-1, uses and miscellaneous 78-20-6 25103-09-7 36460-46-5 RL: USES (Uses) (synergistic stabilizer compns. from diorganotin S,S'-bis(mercaptopcarboxylate) and, for poly(vinyl chloride))				
IT	25168-24-5 26401-97-8 RL: USES (Uses) (synergistic stabilizer compns. from diorganotin S,O-mercaptopcarboxylates and, for poly(vinyl chloride))				
RN	25168-24-5 HCPLUS				
CN	Acetic acid, 2,2'-(dibutylstannylene)bis(thio)]bis-, diisooctyl ester (9CI) (CA INDEX NAME)				



RN 26401-97-8 HCPLUS
 CN Acetic acid, 2,2'-(dioctylstannylene)bis(thio)]bis-, diisooctyl ester (9CI) (CA INDEX NAME)

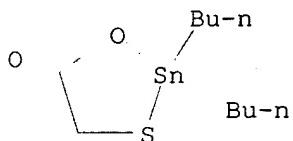


IT 78-20-6 25103-09-7 36460-46-5

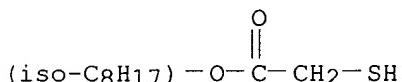
RL: USES (Uses)

(synergistic stabilizer compns. from diorganotin
S,S'-bis(mercaptopcarboxylate) and, for poly(vinyl chloride))

RN 78-20-6 HCAPLUS

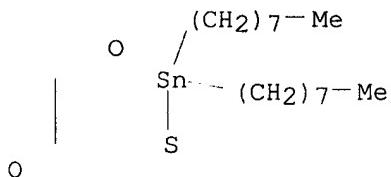
CN 1,3,2-Oxathiastannolan-5-one, 2,2-dibutyl- (6CI, 8CI, 9CI) (CA INDEX
NAME)

RN 25103-09-7 HCAPLUS

CN Acetic acid, mercapto-, isoctyl ester (6CI, 7CI, 8CI, 9CI) (CA INDEX
NAME)

RN 36460-46-5 HCAPLUS

CN 4H-1,3,2-Oxathiastannin-5(6H)-one, 2,2-dioctyl- (9CI) (CA INDEX NAME)



L55 ANSWER 35 OF 38 HCAPLUS COPYRIGHT 2002 ACS

AN 1971:32349 HCAPLUS

DN 74:32349

TI Stabilization of vinyl chloride polymers by organotin compounds

IN Riethmayer, Siegfried

PA Chemische Werke Muenchen Otto Baerlocher G.m.b.H.

SO Ger. Offen., 11 pp.

CODEN: GWXXBX

DT Patent

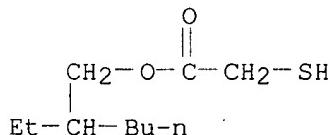
LA German

IC C08F

CC 36 (Plastics Manufacture and Processing)

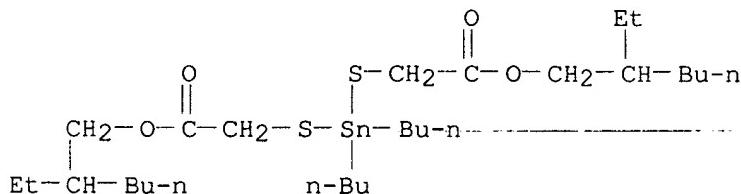
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 1913948	A	19701112	DE 1969-1913948	19690319
AB	Addn. of 0.2-2.5% [R ₂ Sn(SY) _x Zy + (HSY) _z] (I) or [R ₃ Sn(SY) _x Zy + (HSY) _z] (II) stabilized PVC and vinyl chloride-vinyl acetate copolymers against heat and light. Thus, a mixt. contg. suspension PVC (K value 70) 100.0, glycerol monooleate 1.0, myristyl stearate 0.5, and I (R = Bu, Y = CH ₂ CO ₂ CH ₂ CHEtBu, Z = OAc, x = y = z = 1) 2.0 parts was plasticized 5 min at 170.degree. to give a film which showed slight darkening or brown discoloration heating 120 or 140 min at 180.degree., resp. Similar stabilizers used were [(n-C ₈ H ₁₇) ₂ -Sn(O ₂ CEt) _{0.3} (CH ₂ CHEtBu) _{0.7} (SCH ₂ CO ₂ CH ₂ CHEtBu) _{1.0} + (HSCH ₂ CHEtBu) _{0.3}] and II (R = Bu, Y = CH ₂ CO ₂ C ₁₂ H ₂₅ , Z = OAc, x = 0.8, y = 0.2, z = 0.2).. <i>Not inverse</i>				
ST	PVC organotin stabilizers; organotin stabilizers PVC; stabilizers organotin PVC; thioglycolates stabilizers PVC; mercaptans stabilizers PVC; tin carboxylates stabilizers PVC				
IT	Tin RL: USES (Uses) (stabilizers, for chloroethylene copolymers)				
IT	9002-86-2, uses and miscellaneous 9003-22-9, uses and miscellaneous RL: USES (Uses) (stabilizers for, tin compds. as)				
IT	7659-86-1 10584-98-2 29004-05-5 31511-35-0 RL: USES (Uses) (stabilizers, for chloroethylene-copolymers)				
IT	7659-86-1 10584-98-2 29004-05-5 RL: USES (Uses) (stabilizers, for chloroethylene copolymers)				
RN	7659-86-1 HCPLUS				
CN	Acetic acid, mercapto-, 2-ethylhexyl ester (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)				



RN 10584-98-2 HCPLUS

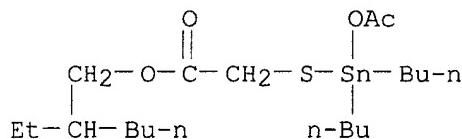
CN 8-Oxa-3,5-dithia-4-stannatetradecanoic acid, 4,4-dibutyl-10-ethyl-7-oxo-, 2-ethylhexyl ester (9CI) (CA INDEX NAME)



RN 29004-05-5 HCPLUS

CN Acetic acid, [(hydroxydibutylstannylyl)thio]-, 2-ethylhexyl ester, acetate

(8CI) (CA INDEX NAME)



L55 ANSWER 36 OF 38 HCAPLUS COPYRIGHT 2002 ACS

AN 1970:456807 HCAPLUS

DN 73:56807

TI Organotin compounds as stabilizers for polymers

IN Sassa, Atsuo; Sukutomi, Masuo; Shinkawa, Hirotoshi; Moriya, Tsuneo; Homma, Keisuke

PA Kyodo Chemical Co., Ltd.

SO Ger. Offen., 40 pp.

CODEN: GWXXBX

DT Patent

LA German

IC C07F; C08F

CC 36 (Plastics Manufacture and Processing)

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 1959909	A	19700611	DE 1969-1959909	19691128
	JP 48024018	B4	19730718	JP 1968-87295	19681130
	US 3697566	A	19721010	US 1969-879592	19691124 <--
	FR 2024633	A5	19700827	FR 1969-41097	19691128
	GB 1302870	A	19730110	GB 1969-58418	19691128
	CA 964666	A1	19750318	CA 1969-68616	19691128
PRAI	JP 1968-87293		19681130		
	JP 1968-87294		19681130		
	JP 1968-87295		19681130		

AB Organotin compounds useful for improving the thermal stability of poly(vinyl chloride) are prep'd. by the reactions of $[\text{BuSn(S)}]_2\text{S}$ with 2-ethylhexyl thioglycolate, diethylene glycol bis(thioglycolate), or pentaerythritol tetrakis(thioglycolate), i.e., to prep. $\text{BuSn(S)SCH}_2\text{CO}_2\text{CH}_2\text{CHETBu}$, $[\text{BuSn(S)SCH}_2\text{CO}_2(\text{CH}_2)_2\text{O}]_2$, and $[\text{BuSn(S)SCH}_2\text{CO}_2\text{CH}_2]_4\text{C}$, resp. Other higher mol. wt. organotin stabilizers are prep'd. similarly. These stabilizers are more effective than some known com. stabilizers.

ST organotin stabilizers PVC; stabilizers organotin PVC;
PVC organotin stabilizers

IT Acetic acid, mercapto-
RL: USES (Uses)

(reaction products with thioxostannanes, stabilizers for vinyl chloride polymers)

IT Tin
RL: USES (Uses)
(stabilizers, for vinyl chloride polymers)

IT 15666-29-2
RL: USES (Uses)
(reaction products with alkyl mercaptoacetates and alkylhydroxyoxostannanes, stabilizers for vinyl chloride polymers)

IT 2273-43-0
RL: USES (Uses)

- (reaction products with alkyl mercaptoacetates, stabilizers for vinyl chloride polymers)
- IT 6380-71-8
RL: USES (Uses)
(reaction products with benzyl mercaptoacetate and butylhydroxyoxostannane, stabilizers for vinyl chloride polymers)
- IT 29431-14-9
RL: USES (Uses)
(reaction products with benzylhydroxyoxostannane and ethylhexyl mercaptoacetate, stabilizers for vinyl chloride polymers)
- IT 112-55-0
RL: USES (Uses)
(reaction products with butylhydroxyoxostannane and cyclohexyl mercaptoacetate, stabilizers for vinyl chloride polymers)
- IT 1074-36-8
RL: USES (Uses)
(reaction products with butylmercaptothioxostannane polymers and ethylene mercaptoacetate, stabilizers for vinyl chloride polymers)
- IT 123-81-9
RL: USES (Uses)
(reaction products with butylmercaptothioxostannane polymers and mercaptobenzoic acid, stabilizers for vinyl chloride polymers)
- IT 1313-82-2
RL: USES (Uses)
(reaction products with butyltrichlorostannane and ethylhexyl mercaptoacetate, stabilizers for vinyl chloride polymers)
- IT 29134-68-7
RL: USES (Uses)
(reaction products with diallyldithioxodistannthiane and ethylhexyl mercaptoacetate, stabilizers for vinyl chloride polymers)
- IT 29134-69-8
RL: USES (Uses)
(reaction products with dibutyldithioxodistannthiane and neopentanetetrayl mercaptoacetate, stabilizers for vinyl chloride polymers)
- IT 13356-20-2
RL: USES (Uses)
(reaction products with dibutyldithioxodistannthiane, stabilizers for vinyl chloride polymers)
- IT 16849-98-2
RL: USES (Uses)
(reaction products with dodecanethiol and oxostannanes, stabilizers for vinyl chloride polymers)
- IT 7383-63-3
RL: USES (Uses)
(reaction products with dodecyl mercaptopropionate and oxostannanes, stabilizers for vinyl chloride polymers)
- IT 10193-99-4
RL: USES (Uses)
(reaction products with dodecylhydroxyoxostannane and dibutyldithioxodistannthiane, stabilizers for vinyl chloride polymers)
- IT 1118-46-3
RL: USES (Uses)
(reaction products with ethylhexyl mercaptoacetate and sodium sulfide, stabilizers for vinyl chloride polymers)
- IT 29534-22-3

RL: USES (Uses)

(reaction products with mercaptocarboxylic acids, stabilizers for vinyl chloride polymers)

IT 7659-86-1 14974-52-8

RL: USES (Uses)

(reaction products with oxostannanes, stabilizers for vinyl chloride polymers)

IT 9002-86-2, uses and miscellaneous

RL: USES (Uses)

(stabilizers for, organotin compds. as)

IT 26821-65-8 26821-66-9 26872-61-7

29134-64-3

RL: USES (Uses)

(stabilizers, for vinyl chloride polymers)

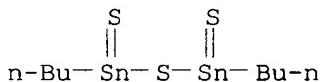
IT 15666-29-2

RL: USES (Uses)

(reaction products with alkyl mercaptoacetates and alkylhydroxyoxostannanes, stabilizers for vinyl chloride polymers)

RN 15666-29-2 HCPLUS

CN Distannathiane, dibutylidithioxo- (9CI) (CA INDEX NAME)



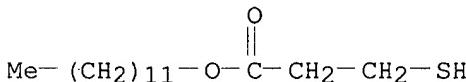
IT 6380-71-8

RL: USES (Uses)

(reaction products with benzyl mercaptoacetate and butylhydroxyoxostannane, stabilizers for vinyl chloride polymers)

RN 6380-71-8 HCPLUS

CN Propanoic acid, 3-mercaptop-, dodecyl ester (9CI) (CA INDEX NAME)



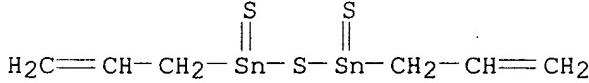
IT 29431-14-9

RL: USES (Uses)

(reaction products with benzylhydroxyoxostannane and ethylhexyl mercaptoacetate, stabilizers for vinyl chloride polymers)

RN 29431-14-9 HCPLUS

CN Distannthiane, 1,3-diallyl-1,3-dithioxo- (8CI) (CA INDEX NAME)



IT 29534-22-3

RL: USES (Uses)

(reaction products with mercaptocarboxylic acids, stabilizers for vinyl chloride polymers)

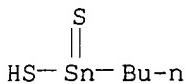
RN 29534-22-3 HCPLUS

CN Stannane, butylmercaptothioxo-, polymers (8CI) (CA INDEX NAME)

CM 1

CRN 17189-27-4

CMF C4 H10 S2 Sn



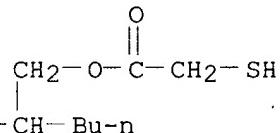
IT 7659-86-1

RL: USES (Uses)

(reaction products with oxostannanes, stabilizers for vinyl chloride polymers)

RN 7659-86-1 HCAPLUS

CN Acetic acid, mercapto-, 2-ethylhexyl ester (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



IT 26821-65-8 26821-66-9 26872-61-7

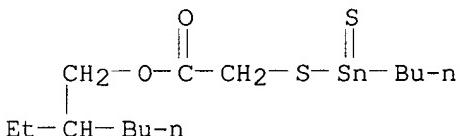
29134-64-3

RL: USES (Uses)

(stabilizers, for vinyl chloride polymers)

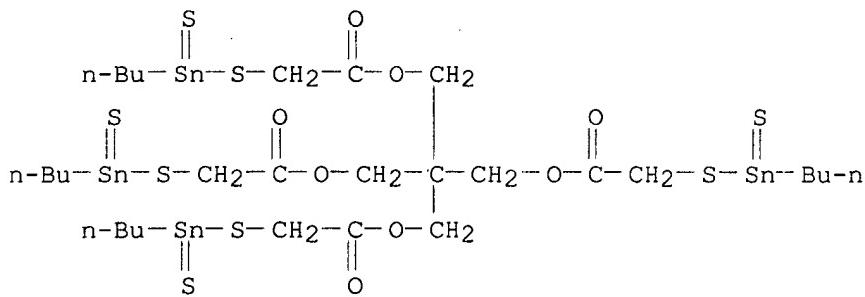
RN 26821-65-8 HCAPLUS

CN Acetic acid, [(butylthioxostannylyl)thio]-, 2-ethylhexyl ester (8CI, 9CI) (CA INDEX NAME)

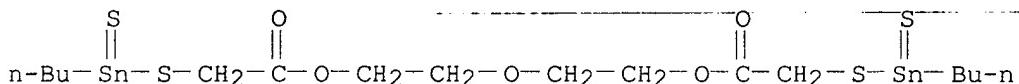


RN 26821-66-9 HCAPLUS

CN Acetic acid, [(butylthioxostannylyl)thio]-, neopantanetetranyl ester (8CI) (CA INDEX NAME)

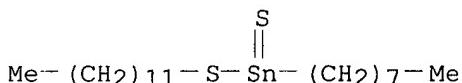


RN 26872-61-7 HCAPLUS

CN Acetic acid, [(butylthioxostannylyl)thio]-, oxydi-2,1-ethanediyl ester (9CI)
(CA INDEX NAME)

RN 29134-64-3 HCAPLUS

CN Stannane, (dodecylthio)octylthioxo- (8CI) (CA INDEX NAME)



L55 ANSWER 37 OF 38 HCAPLUS COPYRIGHT 2002 ACS

AN 1969:439847 HCAPLUS

DN 71:39847

TI Organotin-stabilized poly(vinyl chloride)

IN Kawakami, Yohei; Seki, Toshio; Uenaka, Shigeyoshi

PA Nitton Kasei Co., Ltd.

SO U.S., 3 pp.

CODEN: USXXAM

DT Patent

LA English

IC C08F

NCL 260045750

CC 36 (Plastics Manufacture and Processing)

FAN.CNT 1

PATENT NO. KIND DATE APPLICATION NO. DATE

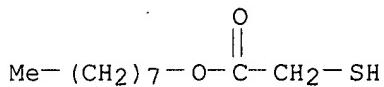
PI US 3450668 A 19690617 US 1965-451677 19650414 <--

AB Vinyl chloride polymers or copolymers were stabilized by addn. of a B complex, prep'd. by reacting equimolar quantities of a lower alkyl mercapto acid, a salt of a lower-alkyl mercapto acid and H₃BO₃, and an organotin stabilizer. Thus, 100 parts emulsion type poly(vinyl chloride) resin (I) was compounded with 0.2 part dibutyltin maleate (II) and 0.8 part of the B complex consisting of equimolar amts. of thioglycolic acid (III), Na thioglycolate, and H₃BO₃. The mixt. was milled 5 min. at 160.degree. and specimens 1 mm. thick and 1 cm. sq. were prep'd. When the sample (IV) was heated at 170.degree. it did not change

Not reviewed

color until after 40 min. exposure compared with 25 min. for a sample (V) contg. 100 parts I and 1 part II. On exposure to uv light, IV and V changed color after 23 and 15 hrs., resp. In volatility tests, IV and V lost 0.3 and 1.8% resp., of their original wt. Other Sn compds. used were dibutyltin bis(benzyl maleate), dibutyltin bis(Et maleate), dibutyltin bis(isopropyl maleate), dimethyltin maleate, and dibutyltin dilaurate. Other B complexes used consisted of equimolar amts. of 2-mercaptopropionic acid, Li thioglycolate, and H₃BO₃; III, Ba thioglycolate, and H₃BO₃; III, Na 2-mercaptopropionate, and H₃BO₃; III, K 2-mercaptopropionate, and H₃BO₃; and III, dibutyltin lauroxide thioglycolate, and H₃BO₃. Other polymers stabilized were a vinyl acetate-vinyl chloride copolymer, a mixt. of I and chlorinated polyethylene, and a mixt. of I and an acrylonitrile-butadiene-styrene copolymer.

- ST PVC organotin stabilized; organotin stabilized PVC
- IT Acetic acid, mercapto-
- RL: USES (Uses)
(reaction products with boric acid, stabilizers from organotin compds. and, for vinyl chloride polymers)
- IT Boric acid (H₃BO₃)
- RL: USES (Uses)
(reaction products with mercapto acid derivs., stabilizers from organotin compds. and, for vinyl chloride polymers)
- IT 1,3,2-Dioxastannepin-4,7-dione, 2,2-dimethyl-
Maleic acid, cyclic dimethyltin deriv.
Maleic acid, ethyl ester, dibutylstannylene deriv.
Maleic acid, isopropyl ester, dibutylstannylene deriv.
Stannane, dibutylbis[(3-carboxyacryloyl)oxy]-, diethyl ester
Stannane, dibutylbis[(3-carboxyacryloyl)oxy]-, diisopropyl ester
- RL: USES (Uses)
(stabilizers from boric acid complexes and, for vinyl chloride polymers)
- IT 9002-88-4, uses and miscellaneous
- RL: USES (Uses)
(chlorinated, stabilizers for, boric acid complexes-organotin compds. as)
- IT 79-42-5 367-51-1 **7664-80-4** 22535-44-0 22535-45-1
22535-46-2 22535-47-3
- RL: USES (Uses)
(reaction products with boric acid, stabilizers from organotin compds. and, for vinyl chloride polymers)
- IT 9002-86-2, uses and miscellaneous 9003-22-9, uses and miscellaneous
9003-56-9, uses and miscellaneous
- RL: USES (Uses)
(stabilizers for, boric acid complexes-organotin compds. as)
- IT 77-58-7 78-04-6 7324-74-5 **22535-48-4**
- RL: USES (Uses)
(stabilizers from boric acid complexes and, for vinyl chloride polymers)
- IT **7664-80-4**
- RL: USES (Uses)
(reaction products with boric acid, stabilizers from organotin compds. and, for vinyl chloride polymers)
- RN 7664-80-4 HCPLUS
- CN Acetic acid, mercapto-, octyl ester (6CI, 8CI, 9CI) (CA INDEX NAME)



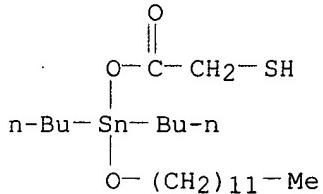
IT 22535-48-4

RL: USES (Uses)

(stabilizers from boric acid complexes and, for vinyl chloride polymers)

RN 22535-48-4 HCAPLUS

CN Stannane, dibutyl(dodecyloxy)(mercaptoacetoxy)- (8CI) (CA INDEX NAME)



L55 ANSWER 38 OF 38 HCAPLUS COPYRIGHT 2002 ACS

AN 1967:46885 HCAPLUS

DN 66:46885

TI The effectiveness of organolead compounds as heat stabilizers for poly(vinyl chloride)

AU Braun, Dietrich; Chang, Sung Bong; Thallmaier, Manfred

CS Deut. Kunststoff-Inst., Darmstadt, Ger.

SO Gummi, Asbest, Kunstst. (1966), 19(11), 1353-6

CODEN: GAKSA2

DT Journal

LA German

CC 36 (Plastics Manufacture and Processing)

AB Vestolit S55 poly(vinyl chloride) powder was mixed with 1% stabilizer and heated 2.5 hrs. at 170.degree. and the HCl given off was measured. The stabilization time during which very little HCl was given off was also measured. The following results were obtained (stabilizer, stabilization time (hrs.), % HCl in 1,2, and 2.5 hrs., time for complete degradation, % conversion, and color of end product given): -, -, 0.141, 0.359, 0.463, 2.7, 0.542, light reddish brown; Bu₂Pb dilaurate, 0.20, 0.151, 0.337, 0.415, 2.9, 0.505, light ochre; Bu₃PbOAc (I), -, 0.195, 0.399, 0.505, 3.1, 0.633, ochre; Bu₃Pb 2-ethylhexanoate (II), -, 0.207, 0.437, 0.531, 2.4, 0.555, yellow; Bu₃Pb undecenoate, 0.45, 0.151, 0.400, 0.496, 2.4, 0.505, light ochre; tributylplumbylimidazole, 0.55, 0.203, 0.755, -, 2.1, 0.835, reddish brown; Bu₃PbSPh, 0.75, 0.098, 0.605, 0.860, 2.7, 0.992, light reddish brown; Bu₄Pb, -, 0.142, 0.313, 0.383, 2.4, 0.420, ochre; PhPb(OAc)₃, -, 0.136, 0.215, 0.278, 2.5, 0.295, light ochre; PhPb(OR)₃ (R = 1:1 mixt. of 2-hexanoyl and 3,5,5-trimethylhexanoyl), 1.03, 0.082, 0.242, 0.310, 3.1, 0.436, light ochre; (PhPbO)₂O, 1.3, 0.020, 0.12, 0.190, 2.3, 0.202, ochre; Ph₂Pb(OAc)₂, -, 0.240, 0.611, -, 2.0, 0.658, yellow; Ph₂Pb dimaleate -, 0.112, 0.377, 0.505, 2.5, 0.505, yellow; Ph₂Pb diethylmaleate, -, 0.252, 0.363, 0.436, 2.5, 0.442, pale yellow; Ph₂PbCl₂, -, 0.281, 0.564, -, 2.2, 0.646, yellow; Ph₂PbO, 0.60, 0.109, 0.370, 0.482, 2.9, 0.600, ochre; Ph₂PbS, 0.60, 0.307, 1.773, -, 2.0, 1.770, brown; Ph₃PbCl, 0.30, 0.248, 0.745, 1.040, 2.5, 1.094, ochre; Ph₃PbOPh, 0.30, 0.124, 0.313, 0.390, 2.4, 0.414, light ochre; (Ph₃Pb)₂S, 0.93, 0.025, 0.281, -, 2.0, 0.301, ochre; Ph₃PbSMe, 0.67, 0.071, 0.482, 0.617, 2.4,

Not
revised

0.631, ochre; Ph₃PbSCH₂CO₂CH₂CH₂CHMeCH₂CMe₃ (III), >2.4, 0.014, 0.019, 0.021, 2.4, 0.023, yellowish; HSCH₂CO₂CH₂CH₂CHMeCH₂CMe₃, -, 0.153, 0.324, -, 2.0, 0.342, ochre; Ph₄Pb (IV), 1.26, 0.031, 0.181, -, 2.3, 0.190, yellow; p-(triphenylplumbyl)styrene (IV), 1.05, 0.003, 0.324, 0.491, 2.7, 0.580, yellow; Ph₆Pb₂ (VI), 1.50, 0.019, 0.120, 0.276, 2.4, 0.280, yellow; Ph₆Sn₂, -, 0.236, -, 1.6, 0.280, olive green; (Ph₃Pb)₄Sn, 1.35, 0.025, 0.141, 0.177, 2.3, 0.211, yellow; Advastab 17M (contg. S and Sn), -, 0.046, 0.123, 0.214, 3.0, 0.330, ochre; Advastab DBTM (Bu₂Sn maleate), 2.00, 0.126, 0.194, 0.255, 2.3, 0.271, ochre; Advastab BC 26 (contg. Ba and Cd) (VII), 0.75, 0.066, 0.360, -, 2.0, 0.371, light ochre; Zn stearate, 0.40, 0.242, -, 1.0, 2.42, blackish brown; Pb stearate, 1.95, 0.062, 0.098, -, 2.2, 0.207, ochre. Similarly, Vestolit S55 was mixed with 1% of compds. I-VII, 1 g. Hoechst Wax E, and 0-50 g. dioctyl phthalate, and heated at 180.degree.. Samples were removed every 15 min. and examd. for color and showed that degradation begins suddenly with a big color change.

ST ORGANOLEAD HEAT STABILIZERS PVC; HEAT STABILIZERS PVC
ORGANOLEAD; LEAD HEAT STABILIZERS PVC; PVC ORGANOLEAD
HEAT STABILIZERS; STABILIZERS HEAT ORGANOLEAD PVC

IT Advastab BC 26

RL: USES (Uses)

(chloroethylene polymer heat stabilized by)

IT 1920-90-7 3076-54-8 10366-23-1 **10527-49-8** 15798-51-3
15798-53-5 15873-20-8 16128-42-0

RL: USES (Uses)

(as chloroethylene polymer heat stabilizer)

IT 78-04-6 595-89-1 1064-10-4 1153-06-6 1802-88-6 2117-69-3
3124-01-4 3600-12-2 **4253-22-9** 6928-68-3 13689-33-3
14127-49-2 15734-55-1 15734-73-3 15798-59-1 15873-22-0
16128-20-4

RL: USES (Uses)

(chloroethylene polymer heat stabilized by)

IT 2587-82-8 15873-19-5

RL: USES (Uses)

(chloroethylene polymer stabilized by)

IT 9002-86-2, uses and miscellaneous

RL: USES (Uses)

(heat stabilizers for, plumbanes or stannanes as)

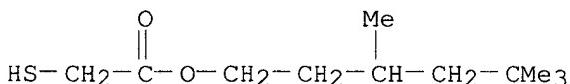
IT **10527-49-8**

RL: USES (Uses)

(as chloroethylene polymer heat stabilizer)

RN 10527-49-8 HCPLUS

CN Acetic acid, mercapto-, 3,5,5-trimethylhexyl ester (6CI, 7CI, 8CI) (CA INDEX NAME)



IT **4253-22-9**

RL: USES (Uses)

(chloroethylene polymer heat stabilized by)

RN 4253-22-9 HCPLUS

CN Stannane, dibutylthioxo- (8CI, 9CI) (CA INDEX NAME)

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n-Bu—Sn—Bu-n

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L2	(353067) SEA FILE=REGISTRY ABB=ON	(S(L)C(L)H(L)O)/ELS(L)4/ELC.SUB
L3		38364 SEA FILE=REGISTRY ABB=ON	L2 NOT 1-40/NR
L4		16503 SEA FILE=REGISTRY ABB=ON	L3 AND ESTER
L5		4006 SEA FILE=REGISTRY ABB=ON	L4 AND 2/O AND 1/S
L6		2424 SEA FILE=REGISTRY ABB=ON	L5 AND 1/NC
L8		492 SEA FILE=REGISTRY ABB=ON	L6 AND (MERCAPT? OR THIOL)
L10		36163 SEA FILE=REGISTRY ABB=ON	((CL OR I OR BR OR F)(L)SN(L)C(L)H)/E LS
L12		3157 SEA FILE=HCAPLUS ABB=ON	L8
L35		18340 SEA FILE=HCAPLUS ABB=ON	L10
L36		118 SEA FILE=HCAPLUS ABB=ON	L12 AND L35
L37		86 SEA FILE=HCAPLUS ABB=ON	L36 AND P/DT
L39		32 SEA FILE=HCAPLUS ABB=ON	L36 NOT L37
L40		44 SEA FILE=HCAPLUS ABB=ON	L37 AND US/PC
L41		19 SEA FILE=HCAPLUS ABB=ON	L40 NOT ((1981-2002)/AY OR (1981-2002) /PRY)
L43		42 SEA FILE=HCAPLUS ABB=ON	L37 NOT US/PC
L44		20 SEA FILE=HCAPLUS ABB=ON	L43 AND PD.B<19801212
L46		4 SEA FILE=HCAPLUS ABB=ON	L39 NOT (1981-2002)/PY
L47		43 SEA FILE=HCAPLUS ABB=ON	L41 OR L46 OR L44
L48		36 SEA FILE=HCAPLUS ABB=ON	L47 AND (PVC OR ?VINYL?)
L56		8 SEA FILE=HCAPLUS ABB=ON	L48 AND (COMPOSITION? OR COMPNS)
L58		9 SEA FILE=HCAPLUS ABB=ON	L47 AND (COMPOSITION? OR COMPNS)
L59		9 SEA FILE=HCAPLUS ABB=ON	L56 OR L58

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L59 ANSWER 1 OF 9 HCAPLUS COPYRIGHT 2002 ACS
 AN 1979:421784 HCAPLUS
 DN 91:21784
 TI Heat-resistant PVC compositions
 IN Kitano, Yoshikazu
 PA Nitto Kasei Co., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 5 pp.
 CODEN: JKXXAF

DT Patent
 LA Japanese
 IC C08L027-02; C08K005-57
 CC 36-6 (Plastics Manufacture and Processing)
 Section cross-reference(s): 29

FAN.CNT 1

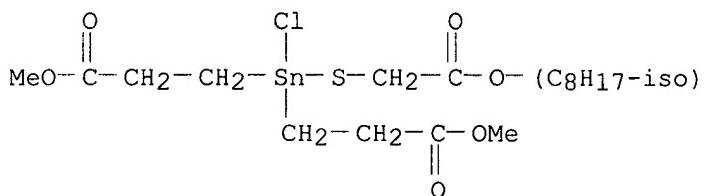
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 53034846	A2	19780331	JP 1976-110629	19760913
	JP 54037975	B4	19791117		

AB Heat-resistant PVC [9002-86-2] compns. contain
 organotin compds. (R02CCH2CH2)2SnR1R2, (R02CCH2CH2)2SnY, and (or)
 (R02CCH2CH2)2SnR1ZSnR2(CH2CH2CO2R)2 [R = C1-18 alkyl; R1 = S(CH2)nCO2R3,
 SR3, O2CR3, O2CCH:CHCO2R3, OR3; R2 = R1, C1; R3 = C1-18 alkyl, alkenyl,
 cycloalkyl, benzyl, alkoxyalkyl; Y = Sm, S(CH2)nCO2, O2CCH:CHCO2,

Not reverse

$S(CH_2)_nCO_2(CH_2)pO_2C(CH_2)_nS$; $Z = Sm$, O ; $m = 1-3$; $n = 1-4$; $p = 2-12$. Thus, a mixt. of 59.4 g Sn foil, 86.1 g Me acrylate [96-33-3], and 200 mL C₆H₆ was heated to 60-70.degree. to give 154.6 g bis(carbomethoxyethyl)tin dichloride [10175-01-6], which (36.4 g) was mixed with 40.8 g isoctyl thioglycolate [25103-09-7], 100 mL C₆H₆, 12.2 g NH₄OH, and 50 mL H₂O, and dispersed. The org. layer was washed with H₂O and concd. to give 65.5 g bis(carbomethoxyethyl)tin bis(isoocetyl mercaptoacetate) (I) [61460-21-7]. A mixt. of 100 parts PVC and 2 parts I was kneaded 3 min at 170.degree. to give a 0.5-mm sheet with better heat resistance at 190.degree. than a control contg. dioctyltin bis(isoocetyl mercaptoacetate) instead of I.

- ST heat resistant PVC compn; tin deriv heat stabilizer; carboxyethyltin deriv heat stabilizer
 IT Heat stabilizers (bis(carbalkoxyethyl)tin compds., for PVC)
 IT 9002-86-2
 RL: USES (Uses)
 (heat stabilizers for, bis(carbalkoxyethyl)tin compds. as)
 IT 67651-32-5
 RL: MOA (Modifier or additive use); USES (Uses)
 (heat stabilizers, for PVC)
 IT 67649-64-3
 RL: MOA (Modifier or additive use); USES (Uses)
 (heat stabilizers, for PVC, prepn. and reactions of)
 IT 61460-21-7 61470-35-7 61470-36-8 61470-37-9 67649-62-1
 67649-63-2 67651-30-3 67651-31-4
 RL: MOA (Modifier or additive use); USES (Uses)
 (heat stabilizers, for PVC, prepn. of)
 IT 10175-02-7P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
 (pregn. and reaction with isoctyl mercaptopropionate)
 IT 10175-01-6P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
 (pregn. and reactions of)
 IT 10175-03-8P 67651-33-6P
 RL: PREP (Preparation)
 (pregn. of)
 IT 7440-31-5, reactions
 RL: RCT (Reactant)
 (reaction of, with Me acrylate)
 IT 30374-01-7
 RL: RCT (Reactant)
 (reaction of, with bis(carbethoxyethyl)tin dichloride)
 IT 112-55-0 143-07-7, reactions 13040-20-5 22504-50-3
 25103-09-7 27431-40-9
 RL: RCT (Reactant)
 (reaction of, with bis(carbomethoxyethyl)tin dichloride)
 IT 96-33-3
 RL: RCT (Reactant)
 (reaction of, with tin)
 IT 67649-64-3
 RL: MOA (Modifier or additive use); USES (Uses)
 (heat stabilizers, for PVC, pregn. and reactions of)
 RN 67649-64-3 HCAPLUS
 CN Propanoic acid, 3,3'-[chloro[[2-(isoctyloxy)-2-oxoethyl]thio]stannylene]bis-, dimethyl ester (9CI) (CA INDEX NAME)

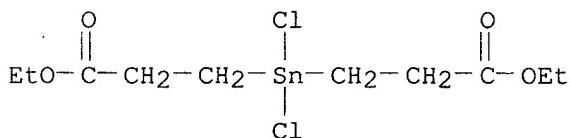


IT 10175-02-7P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and reaction with isoctyl mercaptopropionate)

RN 10175-02-7 HCPLUS

CN Propanoic acid, 3,3'-(dichlorostannylene)bis-, diethyl ester (9CI) (CA INDEX NAME)

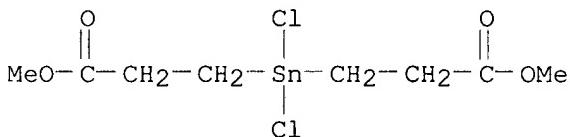


IT 10175-01-6P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and reactions of)

RN 10175-01-6 HCPLUS

CN Propanoic acid, 3,3'-(dichlorostannylene)bis-, dimethyl ester (9CI) (CA INDEX NAME)

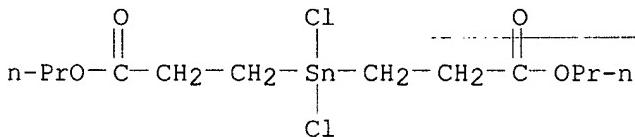


IT 10175-03-8P

RL: PREP (Preparation)
(prepn. of)

RN 10175-03-8 HCPLUS

CN Propanoic acid, 3,3'-(dichlorostannylene)bis-, dipropyl ester (9CI) (CA INDEX NAME)

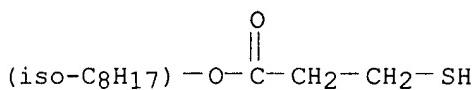


IT 30374-01-7

RL: RCT (Reactant)
(reaction of, with bis(carbethoxyethyl)tin dichloride)

RN 30374-01-7 HCPLUS

CN Propanoic acid, 3-mercato-, isoctyl ester (9CI) (CA INDEX NAME)

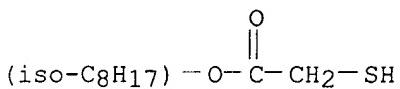


IT 25103-09-7

RL: RCT (Reactant)

(reaction of, with bis(carbomethoxyethyl)tin dichloride)

RN 25103-09-7 HCAPLUS

CN Acetic acid, mercapto-, isoctyl ester (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

L59 ANSWER 2 OF 9 HCAPLUS COPYRIGHT 2002 ACS

AN 1978:490663 HCAPLUS

DN 89:90663

TI Liquid stabilizer systems and vinyl halide resin compositions containing them

IN Hoch, Samuel; Ceprini, Mario Q.; Szabo, Emery

PA Tenneco Chemicals, Inc., USA

SO U.S., 7 pp.

CODEN: USXXAM

DT Patent

LA English

IC C08K005-58

NCL 260045750S

CC 36-6 (Plastics Manufacture and Processing)

FAN.CNT 1

*Not
reversed*

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 4059562	A	19771122	US 1977-779650	19770321 <--
	JP 54143455	A2	19791108	JP 1978-50263	19780428
PRAI	US 1977-779650		19771122		
AB	Organotin ethanolmercaptides contg. a higher alc. component and an alkyl acid phosphate are good heat stabilizers for PVC [9002-86-2]. Thus, laurylmercaptan [112-55-0] 130.6, 2-mercaptopropanoic acid [60-24-2] 98.7, butylstannoic acid 131.8, and 2-methyl-2,4-pentanediol [107-41-5] 159.1 g were heated at 90-5.degree. at 110-20 mm until 22.7 g water was collected. A 4-methyl-2-pentanol [108-11-2]-P2O5 mixt. (2.5 g) was added to give a soln. of monobutyltin mono(dodecylmercaptide) di(ethanolmercaptide) (I) [65411-05-4]. A PVC formulation contg. 0.40 part I/100 parts resin developed a color (off-white) after 8 min at 178.degree., compared with 6 and 8 (slightly yellow to yellow) for formulations contg. com. stabilizers.				
ST	organotin ethanolmercaptide stabilizer PVC; heat stabilizer PVC				
IT	Heat stabilizers (organotin ethanolmercaptides, for PVC)				
IT	Alcohols, uses and miscellaneous (C12-15-alkyl, organotin ethanolmercaptide heat stabilizers contg.)				
IT	9002-86-2 RL: USES (Uses)				

(heat stabilizers for, organotin ethanolmercaptides as)

IT 65411-04-3 65411-05-4 65411-06-5 65411-07-6 65436-57-9
 65436-58-0 65459-04-3
 RL: MOA (Modifier or additive use); USES (Uses)
 (heat stabilizers, for PVC)

IT 104-76-7 107-41-5 108-11-2D, mixed esters with phosphorus pentoxide
 1314-56-3D, reaction products with methylpentanol
 RL: USES (Uses)
 (organotin ethanolmercaptide heat stabilizers contg.)

IT 25103-09-7
 RL: RCT (Reactant)
 (reaction of, with butylstannoic acid and mercaptoethanol)

IT 1313-82-2, reactions
 RL: RCT (Reactant)
 (reaction of, with butyltin trichloride and mercaptoethanol)

IT 60-24-2
 RL: RCT (Reactant)
 (reaction of, with butyltin trichloride and sodium sulfide)

IT 112-55-0
 RL: RCT (Reactant)
 (reaction of, with dibutyltin dichloride and mercaptoethanol)

IT 818-08-6
 RL: RCT (Reactant)
 (reaction of, with isooctyl thioglycolate and mercaptoethanol)

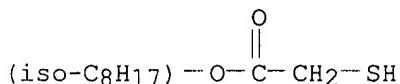
IT 2273-43-0
 RL: RCT (Reactant)
 (reaction of, with isooctylthioglycolate and mercaptoethanol)

IT 683-18-1
 RL: RCT (Reactant)
 (reaction of, with laurylmercaptan and mercaptoethanol)

IT 1118-46-3
 RL: RCT (Reactant)
 (reaction of, with mercaptoethanol and sodium sulfide)

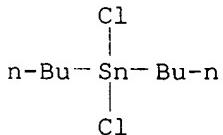
IT 25103-09-7
 RL: RCT (Reactant)
 (reaction of, with butylstannoic acid and mercaptoethanol)

RN 25103-09-7 HCAPLUS
 CN Acetic acid, mercapto-, isooctyl ester (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

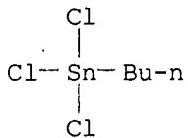


IT 683-18-1
 RL: RCT (Reactant)
 (reaction of, with laurylmercaptan and mercaptoethanol)

RN 683-18-1 HCAPLUS
 CN Stannane, dibutylchloro- (8CI, 9CI) (CA INDEX NAME)



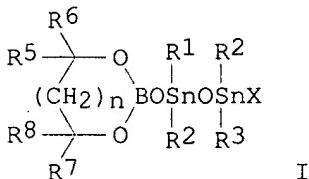
IT 1118-46-3
 RL: RCT (Reactant)
 (reaction of, with mercaptoethanol and sodium sulfide)
 RN 1118-46-3 HCAPLUS
 CN Stannane, butyltrichloro- (8CI, 9CI) (CA INDEX NAME)



L59 ANSWER 3 OF 9 HCAPLUS COPYRIGHT 2002 ACS
 AN 1978:444633 HCAPLUS
 DN 89:44633
 TI Stabilizer composition for plastics
 IN Gough, Robert George; Buescher, Francis Joseph
 PA Cincinnati Milacron, Inc., USA
 SO Ger. Offen., 31 pp.
 CODEN: GWXXBX
 DT Patent
 LA German
 IC C08L027-00
 CC 36-6 (Plastics Manufacture and Processing)
 Section cross-reference(s): 29
 FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 2703904	B2	19790301	DE 1977-2703904	19770131
	DE 2703904	C3	19791025		
	US 4021407	A	19770503	US 1976-700572	19760628 <--
PRAI	US 1976-700572		19760628		
GI					

Not reverse



AB The borates I ($\text{R}_1, \text{R}_2, \text{R}_3, \text{R}_4 = \text{hydrocarbyl}$; $\text{R}_5, \text{R}_7 = \text{H}, \text{C}_1\text{-4 alkyl}$; $\text{R}_6, \text{R}_8 = \text{C}_1\text{-4 alkyl}$; $\text{X} = \text{Cl}, \text{Br}$; $n = 0\text{-}2$) and thiols (SH equiv. 40-400, b. $>180^\circ$) are synergistic heat stabilizers for vinyl halide polymers. Thus, refluxing 10.0 g 1-chloro-3-hydroxy-1,1,3,3-tetramethyldistannoxyane [1724-79-4], 3.93 g 4,4,6-trimethyl-1,3,2-dioxaborinan-2-ol [78-60-4], and C_6H_6 1.5 h with H_2O distn. gives 100% crude 2-[(3-chloro-1,1,3,3-tetramethyldistannoxy)oxy]-4,4,6-trimethyl-1,3,2-dioxaborinane (I, $\text{R}_1\text{-R}_6 = \text{R}_8 = \text{Me}$; $\text{R}_7 = \text{H}$, $\text{X} = \text{Cl}$, $n = 1$) (II) [63245-40-9]. Calendering PVC [9002-86-2] contg. 0.5 phr II and 0.33 phr isoctyl mercaptoacetate (III) [25103-09-7] at 193° . requires 8 min for yellowing, compared with 2 in the absence of I or II.

ST heat stabilizer PVC; distannoxanyloxydioxaborinane heat stabilizer; dioxaborinane_distannoxanyloxy heat stabilizer; borate cyclic heat stabilizer; tin compd heat stabilizer

IT Heat stabilizers
 ((distannoxanyloxy)dioxaborinanes-thiols, for PVC)

IT Thiols, uses and miscellaneous
 RL: MOA (Modifier or additive use); USES (Uses)
 (heat stabilizers, contg. (distannoxanyloxy)dioxaborinanes, for PVC)

IT 9002-86-2
 RL: USES (Uses)
 (heat stabilizers for, (distannoxanyloxy)dioxaborinanes-thiols as)

IT 68-11-1, uses and miscellaneous 107-96-0 111-88-6 112-55-0
 814-71-1 7383-63-3 7575-23-7 10047-28-6 10220-46-9
25103-09-7 30374-01-7
 RL: MOA (Modifier or additive use); USES (Uses)
 (heat stabilizers, contg. (distannoxanyloxy)dioxaborinanes, for PVC)

IT 63245-39-6 63245-40-9 63802-89-1
 RL: MOA (Modifier or additive use); USES (Uses)
 (heat stabilizers, contg. thiols, for PVC)

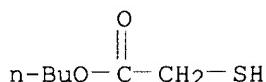
IT 78-60-4
 RL: RCT (Reactant)
 (reaction of, with hydroxydistannoxanes)

IT 1724-79-4 10428-21-4 28520-98-1
 RL: RCT (Reactant)
 (reaction of, with trimethyldioxaboranol)

IT 10047-28-6 10220-46-9 25103-09-7
30374-01-7
 RL: MOA (Modifier or additive use); USES (Uses)
 (heat stabilizers, contg. (distannoxanyloxy)dioxaborinanes, for PVC)

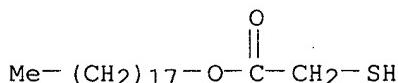
RN 10047-28-6 HCPLUS

CN Acetic acid, mercapto-, butyl ester (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



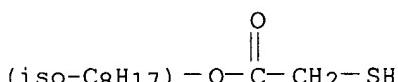
RN 10220-46-9 HCPLUS

CN Acetic acid, mercapto-, octadecyl ester (7CI, 8CI, 9CI) (CA INDEX NAME)



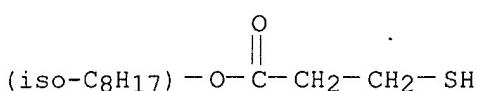
RN 25103-09-7 HCPLUS

CN Acetic acid, mercapto-, isoctyl ester (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



RN 30374-01-7 HCAPLUS

CN Propanoic acid, 3-mercaptop-, isoctyl ester (9CI) (CA INDEX NAME)

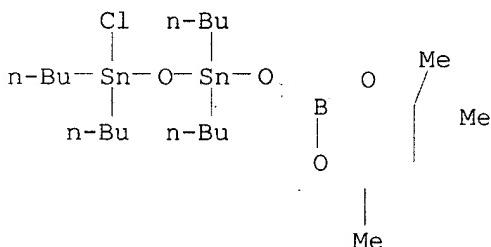


IT 63245-39-6 63245-40-9 63802-89-1

RL: MOA (Modifier or additive use); USES (Uses)
(heat stabilizers, contg. thiols, for PVC)

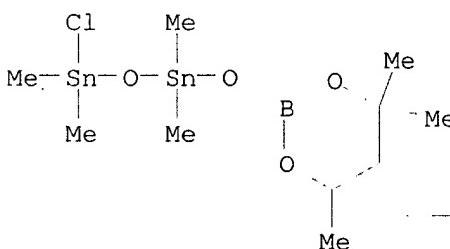
RN 63245-39-6 HCAPLUS

CN 1,3,2-Dioxaborinane, 4,4,6-trimethyl-2-[(1,1,3,3-tetrabutyl-3-chlorodistannoxanyl)oxy]- (9CI) (CA INDEX NAME)



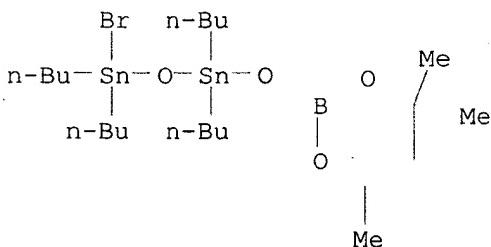
RN 63245-40-9 HCAPLUS

CN 1,3,2-Dioxaborinane, 2-[(3-chloro-1,1,3,3-tetramethyldistannoxanyl)oxy]-4,4,6-trimethyl- (9CI) (CA INDEX NAME)



RN 63802-89-1 HCAPLUS

CN 1,3,2-Dioxaborinane, 2-[(3-bromo-1,1,3,3-tetrabutyldistannoxanyl)oxy]-4,4,6-trimethyl- (9CI) (CA INDEX NAME)



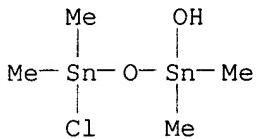
IT 1724-79-4 10428-21-4 28520-98-1

RL: RCT (Reactant)

(reaction of, with trimethyldioxaboranol)

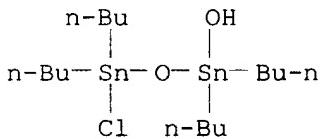
RN 1724-79-4 HCPLUS

CN Distannoxane, 1-chloro-3-hydroxy-1,1,3,3-tetramethyl- (8CI, 9CI) (CA INDEX NAME)



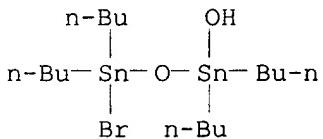
RN 10428-21-4 HCPLUS

CN Distannoxane, 1,1,3,3-tetrabutyl-1-chloro-3-hydroxy- (8CI, 9CI) (CA INDEX NAME)



RN 28520-98-1 HCPLUS

CN Distannoxane, 1-bromo-1,1,3,3-tetrabutyl-3-hydroxy- (8CI, 9CI) (CA INDEX NAME)



L59 ANSWER 4 OF 9 HCPLUS COPYRIGHT 2002 ACS

AN 1977:454075 HCPLUS

DN 87:54075

TI Synergistic organotin borate stabilizer compositions and resins containing same

IN Gough, Robert George; Buescher, Francis Joseph

PA Cincinnati Milacron, Inc., USA

SO U.S., 9 pp.

CODEN: USXXAM

DT Patent

LA English

IC C08K005-57

NCL 260045750J

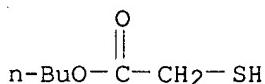
CC 36-6 (Plastics Manufacture and Processing)

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 4021407	A	19770503	US 1976-700572	19760628 <--
	DE 2703904	B2	19790301	DE 1977-2703904	19770131
	DE 2703904	C3	19791025		

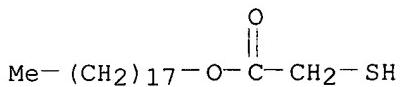
Not reverse

AU 7722749	A1 19780907	AU 1977-22749	19770228
AU 497668	B2 19781221		
JP 53007754	A2 19780124	JP 1977-23716	19770304
JP 55004334	B4 19800130		
GB 1570812	A 19800709	GB 1977-11193	19770316
CA 1084691	A1 19800902	CA 1977-274590	19770323
PRAI US 1976-700572	19760628		
AB A PVC [9002-86-2] resin compn. with improved discoloration resistance during processing is prep'd., contg. a synergistic stabilizer comprising an organotin borate and an org. thiol. Thus, a mixt. of 1 mol H ₃ BO ₃ , 1 mol 2-methyl-2,4-pentanediol [107-41-5], and 1000 mL C ₆ H ₆ was refluxed and dried under reduced pressure to give a white solid [78-60-4] (with m.p. 73-5.degree.) which (0.0273 mol) was treated with 0.0273 mol 1-hydroxy-3-chloro-1,1,3,3-tetramethyldistannoxane [1724-79-4] in refluxing C ₆ H ₆ for 1.5 h. The resulting product was dried and crystd. from acetonitrile to give white crysts. (I) [63245-40-9] with m.p. 252-53.degree.. A mixt. of PVC 100, TiO ₂ 1.0, Ca stearate 1.0, I 0.5, isoctyl thioglycolate [25103-09-7] 0.33 part was stirred 5 min and rolled at 380.degree.F; discoloration occurred in 8 min compared with 2 min for a control when I was omitted.			
ST heat stabilizer PVC resin; thiol org heat stabilizer; borate organotin heat stabilizer			
IT Heat stabilizers (organotin borate-org. thiol, for PVC)			
IT 9002-86-2			
IT RL: USES (Uses) (heat stabilizers for)			
IT 68-11-1, uses and miscellaneous 107-96-0 111-88-6 112-55-0 814-71-1 7383-63-3 7575-23-7 10047-28-6 10220-46-9 25103-09-7 30374-01-7 63245-39-6 63245-40-9			
IT RL: MOA (Modifier or additive use); USES (Uses) (heat stabilizers, for PVC)			
IT 107-41-5			
IT RL: RCT (Reactant) (reaction of, with boric acid)			
IT 78-60-4			
IT RL: RCT (Reactant) (reaction of, with hydroxychlorotetramethyldistannoxane)			
IT 10043-35-3, reactions			
IT RL: RCT (Reactant) (reaction of, with methylpentanediol)			
IT 1724-79-4			
IT RL: RCT (Reactant) (reaction of, with trimethylhydroxydioxaborinane)			
IT 10047-28-6 10220-46-9 25103-09-7 30374-01-7 63245-39-6 63245-40-9			
IT RL: MOA (Modifier or additive use); USES (Uses) (heat stabilizers, for PVC)			
RN 10047-28-6 HCPLUS			
CN Acetic acid, mercapto-, butyl ester (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)			



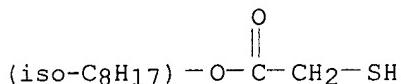
RN 10220-46-9 HCPLUS

CN Acetic acid, mercapto-, octadecyl ester (7CI, 8CI, 9CI) (CA INDEX NAME)



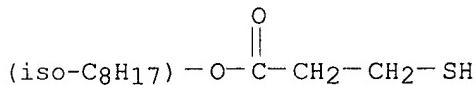
RN 25103-09-7 HCPLUS

CN Acetic acid, mercapto-, isoctyl ester (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



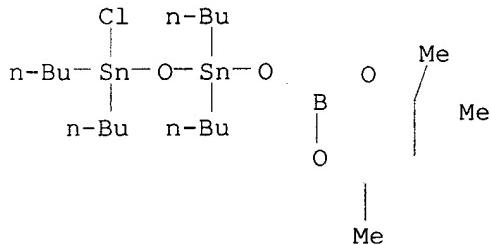
RN 30374-01-7 HCPLUS

CN Propanoic acid, 3-mercaptop-, isoctyl ester (9CI) (CA INDEX NAME)



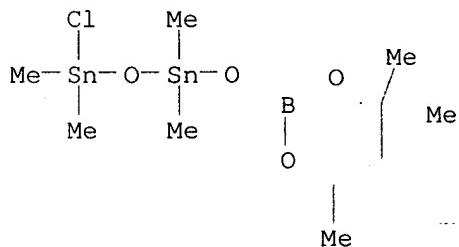
RN 63245-39-6 HCPLUS

CN 1,3,2-Dioxaborinane, 4,4,6-trimethyl-2-[(1,1,3,3-tetrabutyl-3-chlorodistannoxyoxy]- (9CI) (CA INDEX NAME)



RN 63245-40-9 HCPLUS

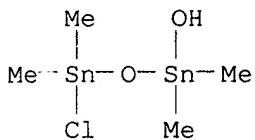
CN 1,3,2-Dioxaborinane, 2-[(3-chloro-1,1,3,3-tetramethyldistannoxyoxy)-4,4,6-trimethyl- (9CI) (CA INDEX NAME)



IT 1724-79-4

KATHLEEN FULLER EIC 1700/LAW LIBRARY 308-4290

RL: RCT (Reactant)
 (reaction of, with trimethylhydroxydioxaborinane)
 RN 1724-79-4 HCPLUS
 CN Distannoxyane, 1-chloro-3-hydroxy-1,1,3,3-tetramethyl- (8CI, 9CI) (CA
 INDEX NAME)



L59 ANSWER 5 OF 9 HCPLUS COPYRIGHT 2002 ACS
 AN 1977:30526 HCPLUS

DN 86:30526

TI Organotin compounds as nonpoisonous heat stabilizers for poly(vinyl chloride)

IN Ohnishi, Fusamatsu; Motobashi, Akira

PA Sankyo Organic Chemicals Co., Ltd., Japan

SO Japan. Kokai, 5 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC C08L027-06

CC 36-6 (Plastics Manufacture and Processing)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 51093947	A2	19760818	JP 1975-19491	19750218
AB	A vinyl chloride resin compn. is prep'd., contg. organotin compds. as nonpoisonous stabilizer. Thus, a mixt. of BuSnCl ₃ [1118-46-3] 98.85, Bu ₂ SuCl ₂ [683-18-1] 1.03, and Bu ₃ SnCl [1461-22-9] 0.12% was treated with NaOH to give a white product which (50.00 g) was treated with 123.21 g 2-ethylhexyl 3-mercaptopropionate [50448-95-8] giving 155.80 g oily substance (LD ₅₀ value for male rat >toreq. 20 g/kg) contg. monobutyltin tris(2-ethylhexyl 3-mercaptopropionate) [61241-05-2] 99.13, dibutyltin bis(2-ethylhexyl 3-mercaptopropionate) [53202-61-2] 0.80, and tributyltin mono(2-ethylhexyl 3-mercaptopropionate) [61241-06-3] 0.07%. A mixt. of PVC [9002-86-2] 100, oily substance (as heat stabilizer) 2, and Ca stearate 0.5 part was kneaded to give a 0.6-mm sheet with improved heat resistance compared with a control when dioctyltin bis(isooctyl mercaptoacetate) was used as heat stabilizer under the same conditions.				
ST	nonpoisonous heat stabilizer PVC; organotin compd heat stabilizer; tin organo heat stabilizer; mercaptopropionatotin butyl heat stabilizer; butylmercaptopropionatotin heat stabilizer				
IT	Heat stabilizers (organotin compds., for PVC)				
IT	53202-61-2 61241-05-2 61241-06-3				
IT	RL: MOA (Modifier or additive use); USES (Uses) (heat stabilizers contg., for PVC)				
IT	9002-86-2				
IT	RL: USES (Uses) (heat stabilizers for, butyltin ethylhexyl mercaptopropionates as)				
IT	50448-95-8				
IT	RL: RCT (Reactant) (reaction of, with butyltin oxide hydroxide)				

IT 683-18-1 1118-46-3 1461-22-9

RL: RCT (Reactant)
(reaction of, with sodium hydroxide)

IT 1310-73-2, reactions

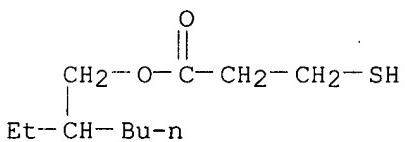
RL: RCT (Reactant)
(with butyltin chlorides)

IT 50448-95-8

RL: RCT (Reactant)
(reaction of, with butyltin oxide hydroxide)

RN 50448-95-8 HCPLUS

CN Propanoic acid, 3-mercaptop-, 2-ethylhexyl ester (9CI) (CA INDEX NAME)

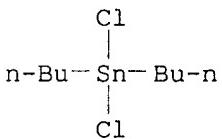
*Not drawn*

IT 683-18-1 1118-46-3 1461-22-9

RL: RCT (Reactant)
(reaction of, with sodium hydroxide)

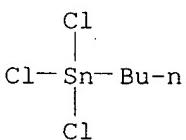
RN 683-18-1 HCPLUS

CN Stannane, dibutylchloro- (8CI, 9CI) (CA INDEX NAME)



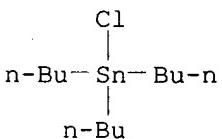
RN 1118-46-3 HCPLUS

CN Stannane, butyltrichloro- (8CI, 9CI) (CA INDEX NAME)



RN 1461-22-9 HCPLUS

CN Stannane, tributylchloro- (8CI, 9CI) (CA INDEX NAME)



L59 ANSWER 6 OF 9 HCPLUS COPYRIGHT 2002 ACS

AN 1975:548458 HCPLUS

DN 83:148458

KATHLEEN FULLER EIC 1700/LAW LIBRARY 308-4290

TI Alkyltin polysulfide thioester stabilized composition
 IN Kugele, Thomas G.; Bresser, Robert E.
 PA Cincinnati Milacron Chemicals Inc., USA
 SO U.S., 6 pp. Division of U.S. 3,869,487.
 CODEN: USXXAM

DT Patent

LA English

IC C08F

NCL 260045750S

CC 36-6 (Plastics Manufacture and Processing)

FAN.CNT 3

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 3890277	A	19750617	US 1974-508713	19740923 <--
	US 3869487	A	19750304	US 1973-400127	19730924 <--

PRAI US 1973-400127 19730924

AB Organotin mercaptocarboxylic acid ester polysulfides, such as bis(methyltin diisooctylthioglycolate) disulfide (I) [55230-73-4], were prep'd. and used as stabilizers for PVC [9002-86-2] and other halogen-contg. polymers. Thus, I was prep'd. in 100% yield by adding 1 mole isoctyl thioglycolate [25103-09-7] to 0.5 mole MeSnCl₃ [993-16-8] in H₂O in presence of 1 mole NaOH and treating with a soln. prep'd. by heating 0.25 mole Na₂S and 0.25 mole S in H₂O. The prepn. and properties of 31 title compds. were described. The early and long term color of PVC samples contg. 0.095% title compds. were given from oven tests at 380.degree.F after initial milling for 5 min at 320.degree.F until catastrophic breakdown occurred.

ST tin mercaptocarboxylic polysulfide; PVC stabilizer tin polysulfide; heat stabilizer PVC

IT Heat stabilizers

(organotin mercaptocarboxylic acid ester polysulfides, for PVC)

IT 9002-86-2

RL: USES (Uses)
 (heat stabilizers for, organotin mercaptocarboxylic acid ester polysulfides as)

IT 55230-73-4

RL: MOA (Modifier or additive use); USES (Uses)
 (heat stabilizers, for PVC)

IT 55230-72-3 55230-74-5 55230-75-6 55230-76-7 55230-78-9
 55230-79-0 55230-80-3 55231-57-7 55231-58-8 56793-35-2

RL: MOA (Modifier or additive use); USES (Uses)
 (heat stabilizers, for halogen-contg. polymers)

IT 753-73-1 993-16-8

RL: RCT (Reactant)
 (reaction of, with isoctylthioglycolate and sodium disulfide)

IT 22868-13-9

RL: RCT (Reactant)
 (reaction of, with methyltin trichloride and isoctyl thioglycolate)

IT 37488-76-9

RL: RCT (Reactant)
 (reaction of, with methyltin trichloride and isoctylthioglycolate)

IT 25103-09-7

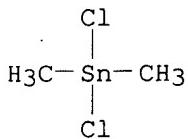
RL: RCT (Reactant)
 (reaction of, with methyltin trichloride and sodium disulfide)

IT 753-73-1 993-16-8

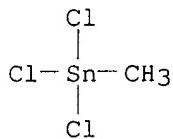
RL: RCT (Reactant)
 (reaction of, with isoctylthioglycolate and sodium disulfide)

RN 753-73-1 HCPLUS

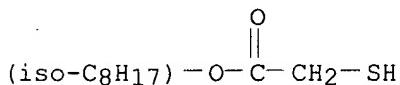
CN Stannane, dichlorodimethyl- (8CI, 9CI) (CA INDEX NAME)



RN 993-16-8 HCAPLUS
 CN Stannane, trichloromethyl- (8CI, 9CI) (CA INDEX NAME)



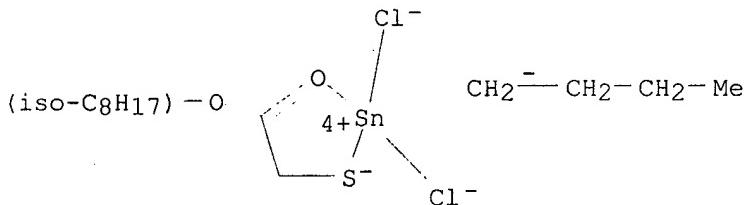
IT 25103-09-7
 RL: RCT (Reactant)
 (reaction of, with methyltin trichloride and sodium disulfide)
 RN 25103-09-7 HCAPLUS
 CN Acetic acid, mercapto-, isoctyl ester (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



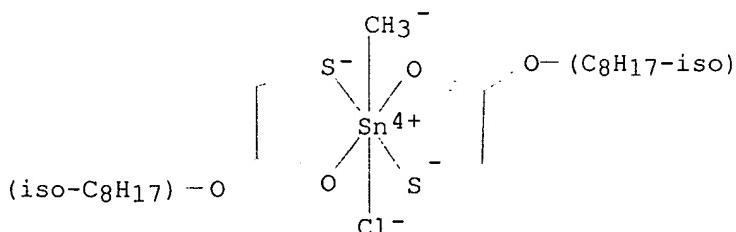
L59 ANSWER 7 OF 9 HCAPLUS COPYRIGHT 2002 ACS
 AN 1974:121073 HCAPLUS
 DN 80:121073
 TI Structure of organotin mercapto esters
 AU Stapfer, Christian H.; Herber, Rolfe H.
 CS Cincinnati Milacron Chem. Inc., Cincinnati, Ohio, USA
 SO J. Organometal. Chem. (1974), 66(3), 425-36
 CODEN: JORCAI
 DT Journal
 LA English
 CC 29-8 (Organometallic and Organometalloidal Compounds)
 Section cross-reference(s): 22
 AB The structural differences existing among organotin mercaptoesters $\text{RnSnS}(\text{CH}_2)_1-2\text{COOR}'^{\frac{1}{2}}\text{-n}$ are reported. Infrared and Moessbauer spectroscopies revealed that thioglycolate and 3-mercaptopropionate esters adopt cyclic cis- or trans-trigonal bipyramidal as well as trans-octahedral configurations, depending on the compn. of the organotin compds. and their mode of prepns. Structural relationship among organotin mercaptides and thioacetates are also discussed.
 ST tin mercapto ester structure; Moessbauer mercapto ester tin; stannane carboxyalklenethio
 IT Moessbauer effect
 (structure of organotin mercapto esters in relation to)
 IT 1185-81-5P 3644-27-7P 15481-49-9P 26896-31-1P 31614-63-8P
 50295-26-6P 51287-84-4P 52165-03-4P 52282-41-4P 52282-42-5P
 52282-43-6P 52282-44-7P 52282-45-8P 52282-46-9P 52282-47-0P

Not reversal

52282-48-1P 52282-49-2P 52282-50-5P 52282-51-6P **52282-52-7P**
52282-53-8P 52306-01-1P 52306-02-2P 52306-03-3P
 52306-04-4P 52306-05-5P 52340-38-2P 52340-39-3P 52389-28-3P
 52437-16-8P 52437-17-9P 52437-52-2P 52795-25-2P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (prepn., ir and Moessbauer spectra of, structure of)
 IT **2365-48-2** 7383-63-3
 RL: RCT (Reactant)
 (reaction with dichlorodialkylstannanes)
 IT **25103-09-7**
 RL: RCT (Reactant)
 (reaction with dichlorostannanes)
 IT **753-73-1 1118-46-3**
 RL: RCT (Reactant)
 (reaction with mercapto carboxylates)
 IT **683-18-1 1135-99-5**
 RL: RCT (Reactant)
 (reaction with mercaptocarboxylates)
 IT **56-35-9**
 RL: RCT (Reactant)
 (reaction with mercaptocarboxylic esters)
 IT **993-16-8**
 RL: RCT (Reactant)
 (reaction with thioglycoates)
 IT 100-53-8 112-55-0 **30374-01-7**
 RL: RCT (Reactant)
 (reaction with tin compds.)
 IT **52282-52-7P 52282-53-8P**
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (prepn., ir and Moessbauer spectra of, structure of)
 RN 52282-52-7 HCPLUS
 CN Tin, butyldichloro(isooctyl mercaptoacetato-O',S)- (9CI) (CA INDEX NAME)



RN 52282-53-8 HCPLUS
 CN Tin, chlorobis(isooctyl mercaptoacetato-O',S)methyl- (9CI) (CA INDEX NAME)

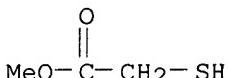


IT 2365-48-2

RL: RCT (Reactant)
(reaction with dichlorodialkylstannanes)

RN 2365-48-2 HCAPLUS

CN Acetic acid, mercapto-, methyl ester (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

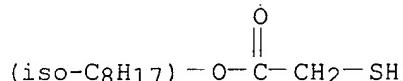


IT 25103-09-7

RL: RCT (Reactant)
(reaction with dichlorostannanes)

RN 25103-09-7 HCAPLUS

CN Acetic acid, mercapto-, isoctyl ester (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

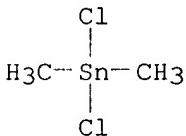


IT 753-73-1 1118-46-3

RL: RCT (Reactant)
(reaction with mercapto carboxylates)

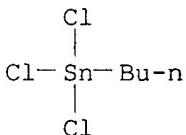
RN 753-73-1 HCAPLUS

CN Stannane, dichlorodimethyl- (8CI, 9CI) (CA INDEX NAME)



RN 1118-46-3 HCAPLUS

CN Stannane, butyltrichloro- (8CI, 9CI) (CA INDEX NAME)

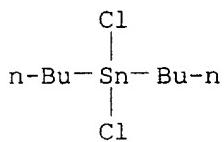


IT 683-18-1 1135-99-5

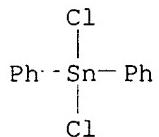
RL: RCT (Reactant)
(reaction with mercaptocarboxylates)

RN 683-18-1 HCAPLUS

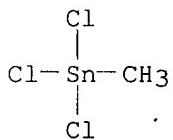
CN Stannane, dibutylchloro- (8CI, 9CI) (CA INDEX NAME)



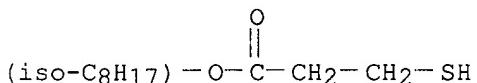
RN 1135-99-5 HCPLUS
 CN Stannane, dichlorodiphenyl- (8CI, 9CI) (CA INDEX NAME)



IT 993-16-8
 RL: RCT (Reactant)
 (reaction with thioglycoates)
 RN 993-16-8 HCPLUS
 CN Stannane, trichloromethyl- (8CI, 9CI) (CA INDEX NAME)



IT 30374-01-7
 RL: RCT (Reactant)
 (reaction with tin compds.)
 RN 30374-01-7 HCPLUS
 CN Propanoic acid, 3-mercaptop-, isoctyl ester (9CI) (CA INDEX NAME)



L59 ANSWER 8 OF 9 HCPLUS COPYRIGHT 2002 ACS
 AN 1970:478120 HCPLUS
 DN 73:78120
 TI Organotin compounds as stabilizers for polymeric compositions
 PA Imperial Chemical Industries Ltd.
 SO Fr., 24 pp.
 CODEN: FRXXAK
 DT Patent
 LA French
 IC C08F
 CC 36 (Plastics Manufacture and Processing)
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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Not reverse

PI FR 1581953 A 19690919 FR 1968-167979 19680927
 PRAI GB 1967-43933 19670927

AB An alkyltin oxide is treated with an org. compn. contg. an active H to give a stabilizer used to prevent thermal degradation in polymers. Thus, trimethylolpropane trimaleate 4.28, ethylene glycol bis(2-mercaptopropionate) 7.15, cyclohexyl maleate (I) 5.58, and Bu₂SnO 14.9 parts, were refluxed in 200 ml PhMe to give 28 parts of a pale brown viscous oil. The oil (1 part) was mixed with 100 parts poly(vinyl chloride) contg. 0.25 part stearic acid and the polymer was stable and colorless after .1toreq.40 min at 175.degree.. In the absence of a stabilizer the same polymer turned black after 20 min. Similar compns. were prep'd. using lauric acid, lauryl alc., or lauryl mercaptan in place of I, and dioctyltin oxide.

ST organotin stabilizers PVC; stabilizers organotin PVC;
 PVC organotin stabilizers

IT Lauric acid

Maleic anhydride

RL: USES (Uses)

(reaction products with stannanes, stabilizers, for chloroethylene polymers)

IT 77-58-7 **683-18-1** 818-08-6 870-08-6 2273-43-0 3377-12-6

RL: USES (Uses)

(reaction products with active hydrogen compds., stabilizers, for chloroethylene polymers)

IT 60-24-2 22504-50-3

RL: USES (Uses)

(reaction products with stannane, stabilizers, for chloroethylene polymers)

IT 79-42-5 98-91-9 111-29-5 111-48-8 112-53-8 112-55-0 126-30-7

1892-29-1 2424-59-1 3570-55-6 **3746-39-2** **7659-86-1**

14440-77-8 15498-42-7 20170-32-5 27309-95-1 28574-65-4

29275-72-7 29275-73-8 29275-74-9 29275-75-0 29275-76-1

29275-77-2 29275-79-4 29303-14-8 **29367-13-3**

RL: USES (Uses)

(reaction products with stannanes, stabilizers, for chloroethylene polymers)

IT 9002-86-2, uses and miscellaneous

RL: USES (Uses)

(stabilizers for, stannane deriv.-active hydrogen compd. reaction products as)

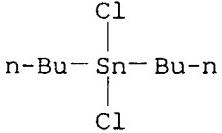
IT **683-18-1**

RL: USES (Uses)

(reaction products with active hydrogen compds., stabilizers, for chloroethylene polymers)

RN 683-18-1 HCAPLUS

CN Stannane, dibutylchloro- (8CI, 9CI) (CA INDEX NAME)



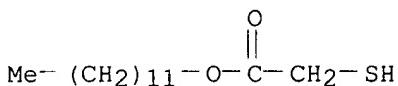
IT **3746-39-2** **7659-86-1** **29367-13-3**

RL: USES (Uses)

(reaction products with stannanes, stabilizers, for chloroethylene polymers)

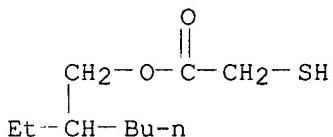
RN 3746-39-2 HCAPLUS

CN Acetic acid, mercapto-, dodecyl ester (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



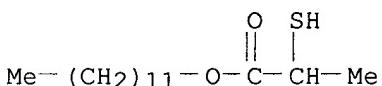
RN 7659-86-1 HCAPLUS

CN Acetic acid, mercapto-, 2-ethylhexyl ester (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



RN 29367-13-3 HCAPLUS

CN Propanoic acid, 2-mercaptop-, dodecyl ester (9CI) (CA INDEX NAME)



L59 ANSWER 9 OF 9 HCAPLUS COPYRIGHT 2002 ACS

AN 1969:115906 HCAPLUS

DN 70:115906

TI Stabilizers for halogenated polymers; preparation of monoalkyltin polymers

IN Eggensperger, Heinz; Andreas, Holger; Franzen, Volker; Neubert, Guenther

PA Deutsche Advance Produktion G.m.b.H.

SO Fr., 7 pp.

CODEN: FRXXAK

DT Patent

LA French

IC C08F

CC 36 (Plastics Manufacture and Processing)

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI FR 1529957 19680621

PRAI DE 19660524

AB RSnCl₃, where R is a Me, Bu, C₈H₁₇, C₁₂H₂₅, or C₁₈H₃₇ group, is heated in an aq. soda soln. to give a monoalkyltin polymer (alkylstannous acid polymer) having the compn. (RSnO_{1.5})_n where n = 2-30. This polymer is dried and then reacted in toluene or a similar solvent with less than a stoichiometric amt. (based on the no. of O atoms) of isoctyl thioglycolate (I), 2-ethylhexanoic acid, isoctyl .beta.- mercaptopropionate, laurylmercaptan, lauric acid, or a similar compd. The H₂O of reaction is removed, and the solvent is distd. to give compns. (mostly liq.) which give a synergistic stabilizing effect when used with a known stabilizer, such as dibutyltinbis(thioglycolic acid) isoctyl ester (II) or dilauryltinbis(thioglycolic acid) isoctyl ester, to increase the thermal stability and light stability of poly-

No + reported

vinyl chloride) (III), chlorinated polyethylene, and other halogenated polymers. The synergistic stabilizing effect gives the same degree of stability with the use of .apprx.50% as much of the known stabilizers (contg. 10-20% of the compns. prep'd. above) as is required when the known stabilizers are used alone. Thus, 282.2 g. BuSnCl₃ was heated to 90.degree. and added to an aq. soln. of 170 g. NaOH. The mixt. was cooled to 25.degree., aspirated, washed with H₂O until neutral, and dried at 100.degree. in vacuo. This butylstannous acid polymer (100 g., 1.5 mole) was treated with 205 g. I in toluene. The H₂O of reaction was removed continuously, and the solvent was finally distd. The residual oil was filtered to give a colorless oil contg. 30.5% Sn. This oil 0.1, II 0.6, and a suspension of III (K value 65) 100 parts were mixed and made into a 0.3-mm. film. This film was colorless after 60 min. in air at 180.degree., but a control film contg. 0.7 part III and none of the oil prep'd. above was yellow-brown in color.

ST halogenated polymer stabilizers; monoalkyltin polymers; PVC stabilizers; stannous acid alkyl polymers; films PVC colorless

IT 27084-96-4

RL: USES (Uses)

(reaction products with isoctyl thioglycolate, stabilizers from dialkyltin thioglycolates and, for **viny**l chloride polymers)

IT 25103-09-7

RL: USES (Uses)

(reaction products with monoalkyltin polymers, stabilizers from dialkyltin thioglycolates and, for **viny**l chloride polymers)

IT 9002-86-2, uses and miscellaneous

RL: USES (Uses)

(stabilizers for, isoctyl thioglycolate-monoalkyltin polymer reaction products as, synergistic)

IT 27084-96-4

RL: USES (Uses)

(reaction products with isoctyl thioglycolate, stabilizers from dialkyltin thioglycolates and, for **viny**l chloride polymers)

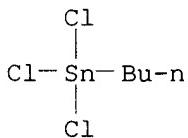
RN 27084-96-4 HCPLUS

CN Stannane, butyltrichloro-, polymers (8CI) (CA INDEX NAME)

CM 1

CRN 1118-46-3

CMF C4 H9 Cl₃ Sn



IT 25103-09-7

RL: USES (Uses)

(reaction products with monoalkyltin polymers, stabilizers from dialkyltin thioglycolates and, for **viny**l chloride polymers)

RN 25103-09-7 HCPLUS

CN Acetic acid, mercapto-, isoctyl ester (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

JAGANNATHAN

SAWS

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